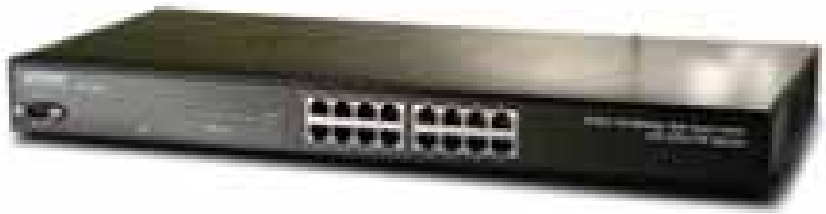
16-Port 10/100Mbps with 8-Port PoE

Web Smart Ethernet Switch

FNSW-1608PS

User's Manual



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Revision

PLANET 16-Port 10/100Mbps with 8-Port PoE Web Smart Ethernet Switch User's Manual

FOR MODEL: FNSW-1608PS

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1. INTRODUCTION

1.1 Checklist

Check the contents of your package for following parts:

- FNSW-1608PS x1
- User's manual CD x1
- Quick installation guide x1
- Power cord x 1
- RS232 cable x1
- Rubber feet x 4
- Two rack-mounting brackets with attachment screws x1

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

1.2 About the Switch

The FNSW-1608PS is equipped with unshielded twisted-pair (UTP) cable ports providing dedicated 10 or 100Mbps bandwidth. The FNSW-1608PS supports MDI/ MDI-X convertible on 16-10/100Mbps ports, also provide PoE inject function on port#1, to #8 which is able to drive 8 IEEE 802.3af compliant powered devices. The dual speed ports use standard twisted-pair cabling and are ideal for SOHO or segmenting networks into small. Each 10/100Mbps port can supports up to 200Mbps of throughput in full-duplex mode, the FNSW-1608PS also provides a simple, cost-effective, and highly reliable network connection for data as well as power. Furthermore, it is the ideal device for bridging among Ethernet, Fast Ethernet workgroups and networks.

With 8 PoE interfaces, the FNSW-1608PS is ideal for small business and workgroups requiring to deploy the PoE for the wireless access points, IP-based surveillance camera or IP phones in any places easily, efficiently and cost effective.

The front panel of FNSW-1608PS provides LEDs for easy recognition of the switch operation status and troubleshooting. These LED indicators display the power status for the system, LNK/ACT and speed for each10/100M port. Also the PoE in use LED indicates for PoE ports (port#1 to port#8).

With data and power over Ethernet from one unit, the FNSW-1608PS shall reduce cables and eliminates the need for dedicated electrical outlets on the wall, ceiling or any unreachable place. A wire carries both data and power lowering the installation costs, simplifying the installation effort and eliminating the need for electricians or extension cords. We are also proud of the key feature – energy saving. With more efficient switching power supply, the efficiency of the FNSW-1608PS would be much better than four linear power adapters in a long run.

The smart functions make it easy to survey and control the PoE power provision to the devices by the Web and Console interface. Basic switching functions such as VLAN, Trunk, QoS and bandwidth control are available for network management.

1.3 Features

- Comply with IEEE 802.3 Ethernet, IEEE 802.3u Fast Ethernet, IEEE 802.3x Flow Control and IEEE 802.3af Power over Ethernet.
- 16-Port 10/100Mbps Fast Ethernet ports
- 8-Port support 48VDC power to PoE Powered Device
- Each switching ports support suto-negotiation-10/20, 100/200Mbps supported
- Prevent packet loss with back pressure(half-duplex) and IEEE 802.3x PAUSE frame flow control(full-duplex)
- High performance Store and Forward architecture, broadcast storm control, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Support 8K absolute MAC addresses , automatic address learning and address aging
- LED indicators for easy network diagnostic
- Local console and remote web management interface
- Auto negotiation speed duplex mode control and bandwidth control, QoS setting on each port
- VLAN for network segregation and support up to 16 port-based VLAN groups
- Management VLAN function support
- Support two trunk groups and up to maximum 4 ports with 800Mbps bandwidth
- PoE power Disable/Enable and PoE power consumption monitoring by management interface
- Auto-MDI/MDI-X detection on each RJ-45 port
- EMI standards comply with FCC, CE class A

1.4 Specification

Model	**FNSW-1608PS**
Network Connector	16-Port RJ-45 for 10/100TX, 8-Port with PoE injector function
LED Display	One power, 1-8 port PoE in-use, LNK/ACT, 100, 9-16 port LNK/ACT, 100
Switch architecture	Store and forward
MAC address	8K MAC address table with Auto learning function
Switch fabric	3,2Gbps
Throughput	2.38Mpps
Remote power feeding	End-point insert type and compatible with IEEE 802.3af Per port feeding power: 15.4 Watts
Management	Console / web management interfaces
IEEE 802.1p Port priority	Allow to assign low and high priority on each port
Port Trunk	Two trunk groups with up to 4-port per trunk
VLAN	Port-Based VLAN, up to 16 groups
Management VLAN	Yes
PoE power control	Allow to disable or enable power provision and assign priority on each PoE port
Power	AC 100~240V, 50/60Hz,
Power consumption	Max. 130 watts, 443 BTU/hr
Temperature	Operating: 0~50 degree C, Storage -40~70 degree C
Humidity	Operating:10% to 90%, Storage: 5% to 95% (Non-condensing)
Dimension (W x D x H)	440 x 120 x 44 mm
EMI	FCC Class A, CE
Standard Compliance	IEEE 802.3 (Ethernet) IEEE 802.3u (Fast Ethernet) IEEE 802.3x (Flow control) IEEE 802.3af Power over Ethernet

	IEEE 802.1p QoS

2. HARDWARE DESCRIPTION

This product provides two different running speeds – 10Mbps, 100Mbps in the same switch and automatically distinguishes the speed of incoming connection.

This section describes the hardware features of FNSW-1608PS. For easier management and control of the Switch, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the FNSW-1608PS, read this chapter carefully.

2.1 Front Panel

The Front Panel of the FNSW-1608PS PoE Web Smart Ethernet Switch consists of 16x Auto-Sensing 10/100Mbps Ethernet RJ-45 Ports. The LED Indicators are also located on the front panel of the FNSW-1608PS.

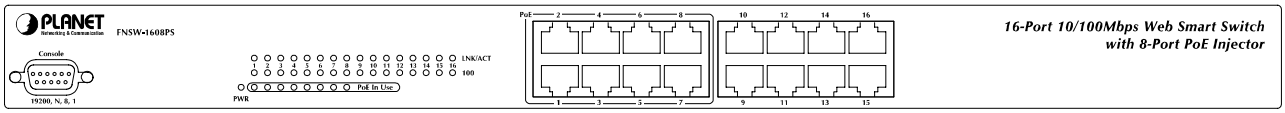


Figure 2-1: FNSW-1608PS Switch front panel

2.1.1 LED indicators

System

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.

Per 10/100Mbps port

LED	Color	Function
PoE in-use	Green	Lights to indicate the port is providing 48VDC in-line power. (1-8 ports)
LNK/ACT	Green	Lights to indicate the link through that port is successfully established.
100	Green	Lights to indicate the port is running in 100Mbps speed.

2.2 Rear Panel

The rear panel of the FNSW-1608PS indicates an AC inlet power socket, which accepts input power from 100 to 240V AC, 50-60Hz, and 1A max. And one console port at rear panel for switch management.

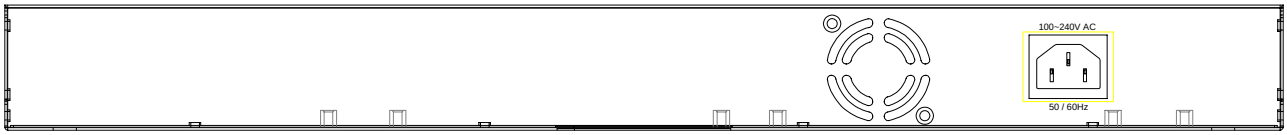


Figure 2-2: FNSW-1608PS Switch rear panel

Power Notice:

1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.
2. In some area, installing a surge suppression device may also help to protect your FNSW-1608PS from being damaged by unregulated surge or current to the FNSW-1608PS.

2.3 Hardware Installation

This part describes how to install your Web Smart Ethernet Switch and make connections to the Switch. Please read the following topics and perform the procedures in the order being presented. To install your Switch on a desktop or shelf, simply completed the following steps.

2.3.1 Desktop Installation

To install a Switch on a desktop or shelf, simply completed the following steps:

Step 1: Attached the rubber feet to the recessed areas on the bottom of the Switch.

Step 2: Place the Switch on a desktop or shelf near an AC power source.

Step 3: Keep enough ventilation space between the Switch and the surrounding objects.

Notice:

When choosing a location, please keep in mind the environmental restrictions discussed in Chapter 1, Section 4, Specification.

Step 4: Connect your Switch to network devices.

A. Connect one end of a standard network cable to the 10/100 RJ-45 ports on the front of the FNSW-1608S Switch.

B. Connect the other end of the cable to the network devices such as printer servers, workstations or routers…etc.

Notice:

Connection to the Switch requires UTP Category 5 network cabling with RJ-45 tips. For more information, please see the Cabling Specification in **Appendix A**.

Step 5: Supply power to the Switch.

A. Connect one end of the power cable to the Switch.

B. Connect the power plug of the power cable to a standard wall outlet then power on the Switch.

When the Switch receives power, the Power LED should remain solid Green.

2.3.2 Rack Mounting

To install the Switch in a **19-inch** standard rack, follow the instructions described below.

Step 1: Place your Switch on a hard flat surface, with the front panel positioned towards your front side.

Step 2: Attach a rack-mount bracket to each side of the Switch with supplied screws attached to the package. Figure 2-3 shows how to attach brackets to one side of the Switch.

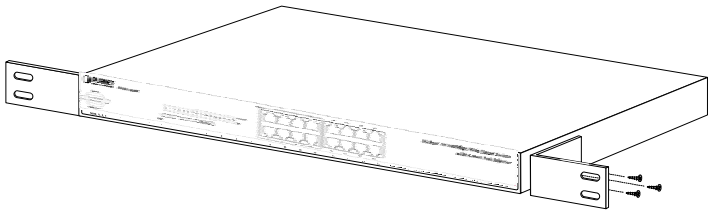


Figure 2-3 Attaching the brackets to the Switch

Caution:

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate your warranty.

Step 3: Secure the brackets tightly.

Step 4: Follow the same steps to attach the second bracket to the opposite side.

Step 5: After the brackets are attached to the Switch, use suitable screws to securely attach the brackets to the rack, as shown in Figure 2-4.

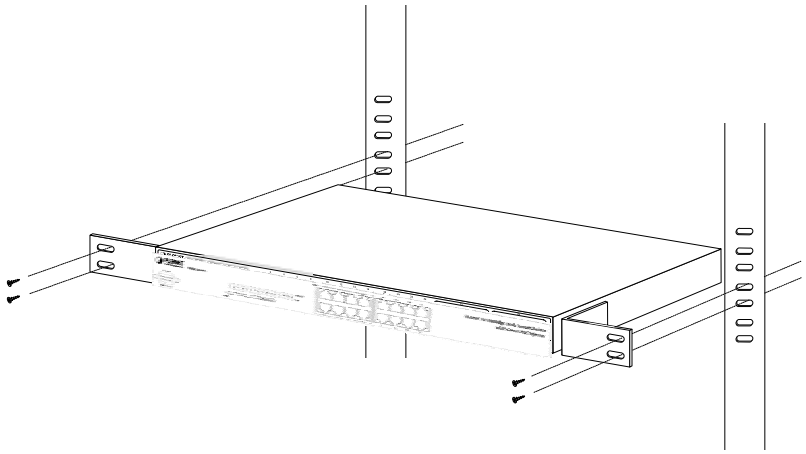


Figure 2-4 Mounting the Switch in a Rack

Step 6: Proceed with the steps 4 and steps 5 of section **2.3.1 Desktop Installation** to connect the network cabling and supply power to your Switch.

2.3.3 As a department / workgroup PoE Switch

Providing up to 8 PoE, in-line power interface, the FNSW-1608PS can easily build a power central-controlled IP phone system, IP Camera system, AP group for the enterprise. For instance, 8 camera / AP can be easily installed around the corner in the company for surveillance demands or build a wireless roaming environment in the office. Without the power-socket limitation, the FNSW-1608PS makes the installation of cameras or WLAN AP more easily and efficiently.

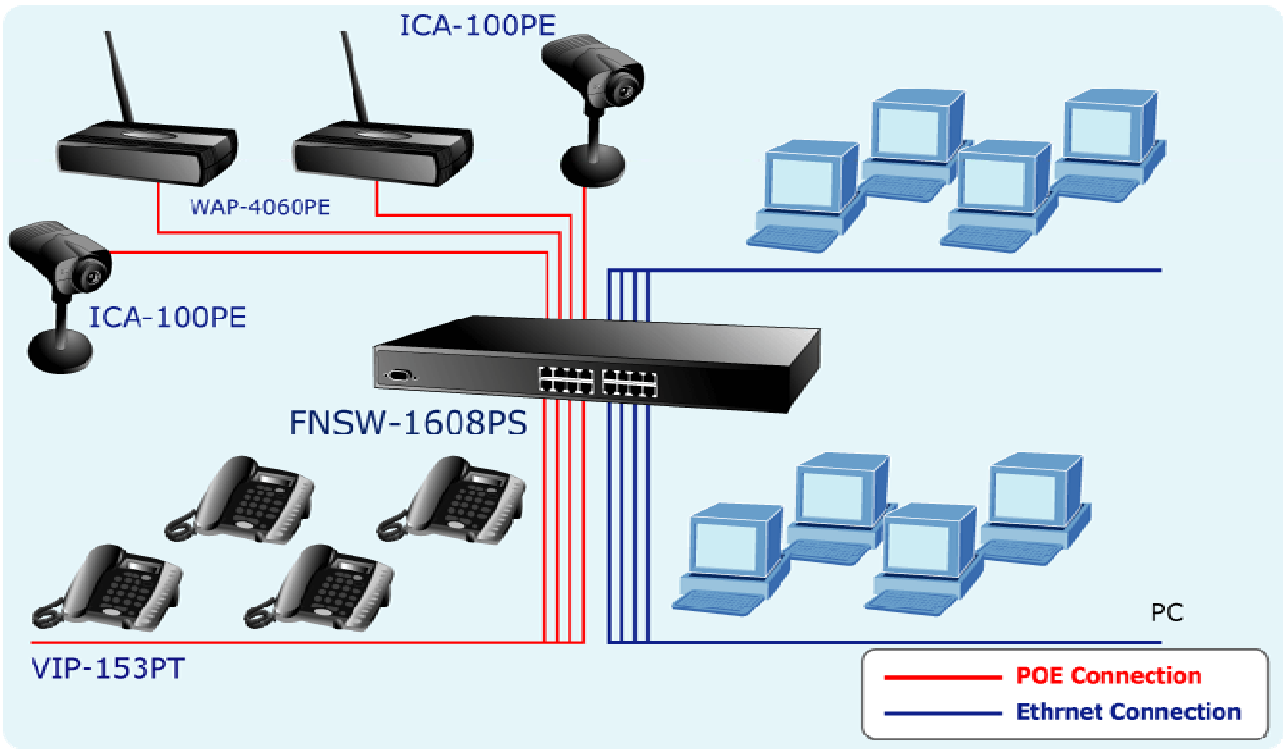


Figure 2-5. PoE Switch connection

3. SWITCH MANAGEMENT

This chapter describes how to manage the FNSW-1608PS. Topics include:

- Overview
- Management methods
- Assigning an IP address to the FNSW-1608PS
- Logging on to the FNSW-1608PS

3.1 Overview

The FNSW-1608PS provides a user-friendly, command line under console interface. Using this interface, you can perform various switch configuration and management activities, including:

Command	Description
Show port [n] / all	Show per port or all port current status of FNSW-1608PS.
Show VLAN [n]	Show current VLAN group status of FNSW-1608PS.
Show trunk	Show current trunk group status of FNSW-1608PS.
Show IP	Show current IP subnet address of FNSW-1608PS.
Show system	Show firmware version, Mac address and IP address of FNSW-1608PS.
Show PoE status[n]	Show per PoE port status(On or Off) of FNSW-1608PS.
Show PoE(n)	Show per PoE port disable/enable status and priority of FNSW-1608PS.
Show management VLAN	Show current management VLAN of FNSW-1608PS.
Show VLAN mode	Show current VLAN mode of FNSW-1608PS.
Show PVID	Show per port PVID of FNSW-1608PS.
Show Priority	Show current priority status of FNSW-1608PS.
Set port [n]	Set per port auto-negotiation speed duplex mode, QoS and bandwidth control, Insert priority tagging function of FNSW-1608PS.
Set Trunk	Disable or enable trunk group of FNSW-1608PS.
Set VLAN(n)	Configure port-based VLAN group of FNSW-1608PS.
Set PoE[n]	Configure per PoE port of FNSW-1608PS.
Set management VLAN	Assign management VLAN of FNSW-1608PS.
Set VLAN mode	Disable or enable port-based VLAN function of FNSW-1608PS.
Set PVID	Assign PVID on each port of FNSW-1608PS.
Set priority	Allow to configure the priority setting of FNSW-1608PS.
Set IP xxx.xxx.xxx.xxx, mmm.mmm.mmm.mmm, ggg.ggg.ggg.ggg	Assign IP address, subnet mask, gateway of FNSW-1608PS.
Set Pass	Change the default password of FNSW-1608PS, the maximum length is 4 characters.
Factory Default	Reset the FNSW-1608PS to factory default mode.
Reboot	Reboot the FNSW-1608PS.
Logout	Logout console interface of FNSW-1608PS.

Please refer to the following Chapter 4 and 5 for the details.

3.2 Management Methods

There are two ways to manage the FNSW-1608PS:

- Local Console Management via the Switch serial port.
- Web Management via a network or dial-up connection.

3.2.1 Local Console Management

You can manage the FNSW-1608PS locally by connecting a VT100 terminal, or a personal computer or workstation with terminal emulation software, to the Switch serial port. The terminal or workstation connects to the Switch serial port using a null modem cable that has the appropriate connectors on each end.

This management method is ideal when:

- The network is unreliable.

- The Network Manager does not have direct network connection.

The serial port of the Switch default setting is set to **19200** baud using a character format of **8** data bits, **no** parity, and **1** stop bit.

Therefore, configure the terminal or workstation to use these settings before you log on to the FNSW-1608PS. You can change this default setting, if desired, after you log on.

3.2.2 Web Management

You can manage the FNSW-1608PS remotely by having a remote host with web browser, such as Microsoft Internet Explorer or Netscape Navigator.

Using this management method:

The FNSW-1608PS must have an Internet Protocol (IP) address accessible for the remote host.

3.3 Assigning an IP Address to the Switch

To manage the FNSW-1608PS remotely through the web browser with a Management Station, you must assign an IP address to the FNSW-1608PS.

To set the IP address, please use **"set ip xxx.xxx.xxx.xxx mmm.mmm.mmm.mmm ggg.ggg.ggg.ggg"** command. For example, to configure the switch with the following IP settings:

IP Address: 192.168.0.100

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.0.254

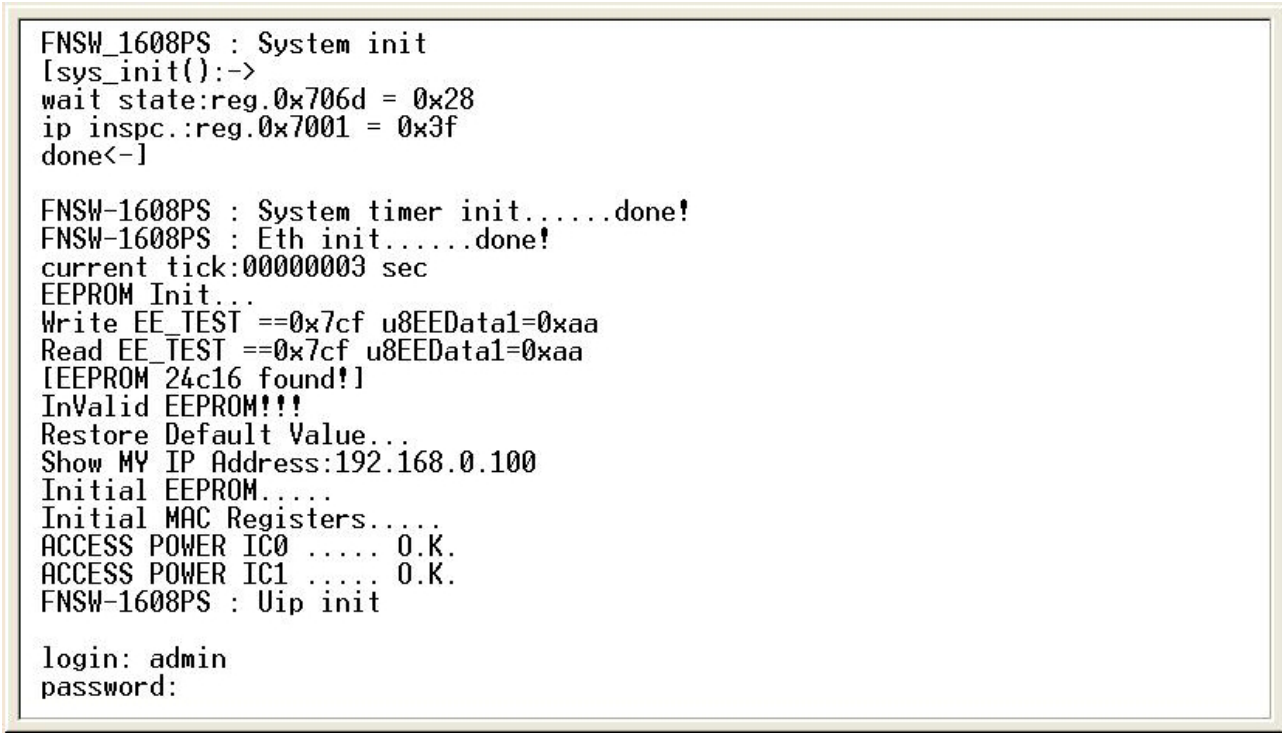
Press the following command and press **<Enter>**

set ip 192.168.0.100 255.255.255.0 192.168.0.254

If the IP is successfully configured, the switch will automatically restart as the following screens. After reboot the Switch and power on completed, you can access the web interface of FNSW-1608PS through the new IP address.

3.4 Logging on to the FNSW-1608PS

When you log on to the FNSW-1608PS console port for the first time, a sign-on string appears and you are prompted for a console login user name and password.



The factory default login username is **admin** without password.

Notice:

1. For security reason, please change and memorize the new password after this first setup.
2. Only accept command in lowercase letter under console interface.

4. CONSOLE INTERFACE

4.1 CONNECT TO PC

RS-232 serial cable

Use the bundled RS-232 serial cable and attach the 9-pin female connector to the male connector on the FNSW-1608PS. Plug the other side of this cable to your PC.

Hyper Terminal

In Windows 98/2000/ME/XP, launch **"HyperTerminal"**, create a new connection, and adjust settings as below:

- Emulation: **VT-100 compatible**
- Baud per second: **19200**
- Data bits: **8**
- Parity: **None**
- Stop bits: **1**
- Flow Control: **None**

To gain a demo, please see the Figure 4-1.

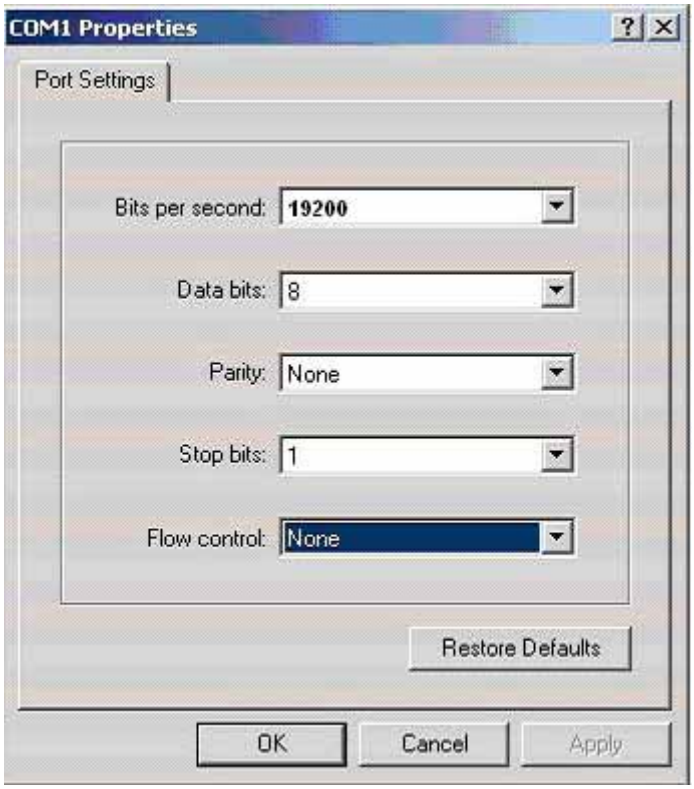


Figure 4-1 Port Settings for console interface

4.2 Login in

Login is required to access the console interface after the self-test completes successfully. The factory default user name is "**admin**" without password. You may change the password by use **"set pass"** command. Please always enter the correct user name and password. (See Figure 4-2)

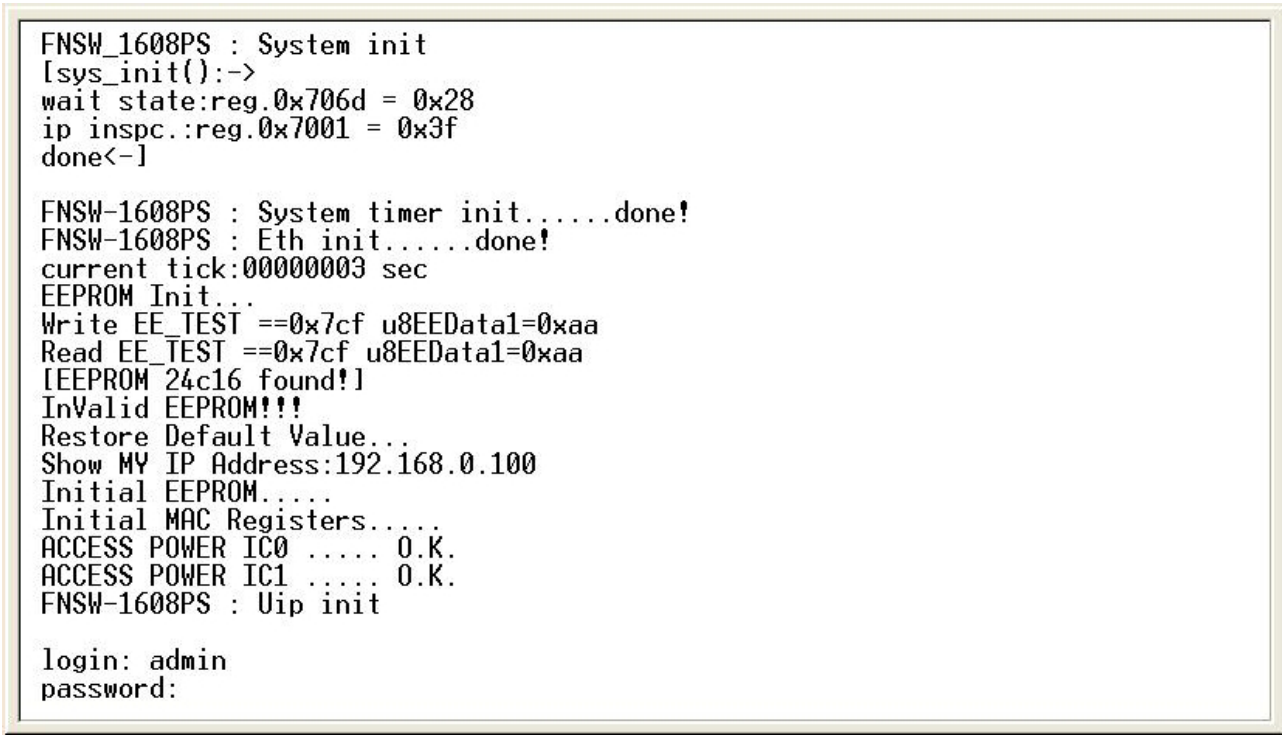


Figure 4-2 FNSW-1608PS login screen

4.3 Main Menu screen

After login the FNSW-1608PS, the main menu screen shows as below.

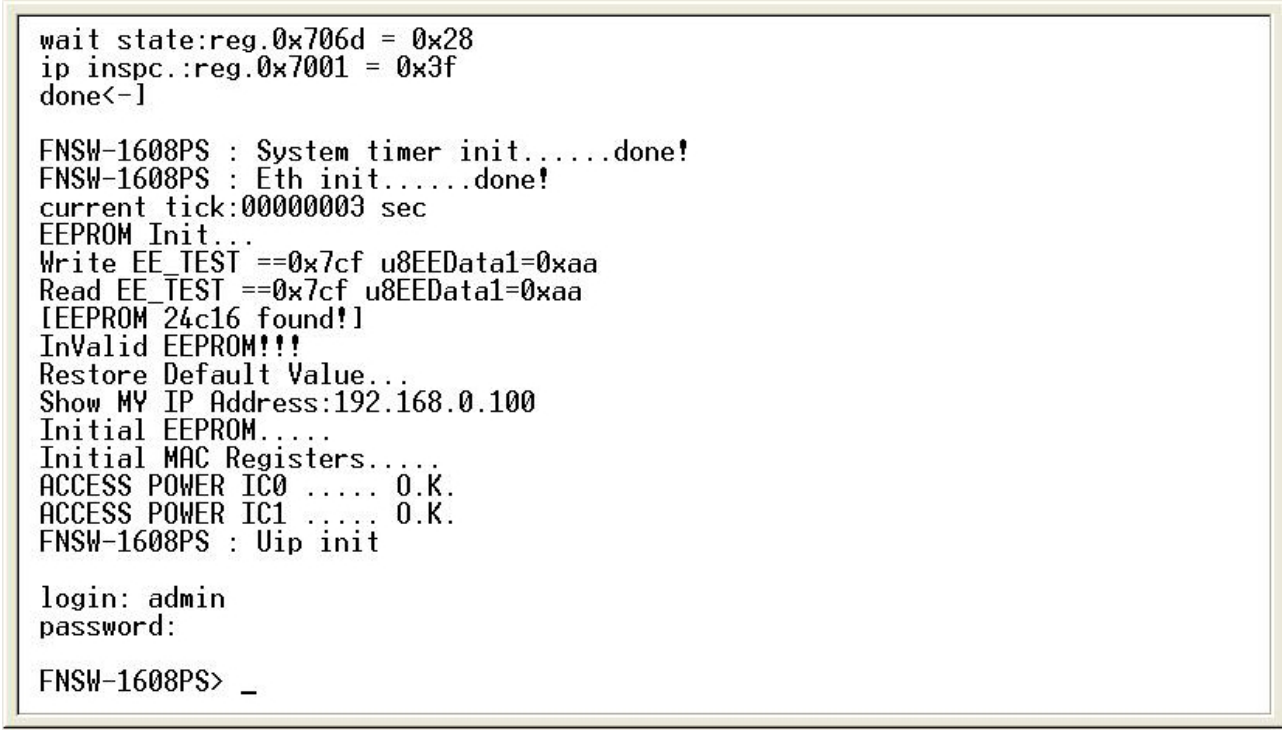


Figure 4-3 FNSW-1608PS Main Menu screen

4.4 Getting Started

4.4.1 General Guidelines

The FNSW-1608PS allows users to configure the device via command line under console interface. Please type **“help”** or **“?”** for all available commands in the**”FNSW-1608PS>”** prompt. The screen of available commands in Figure 4-4 appears, and the detail description shown in table 4-1.

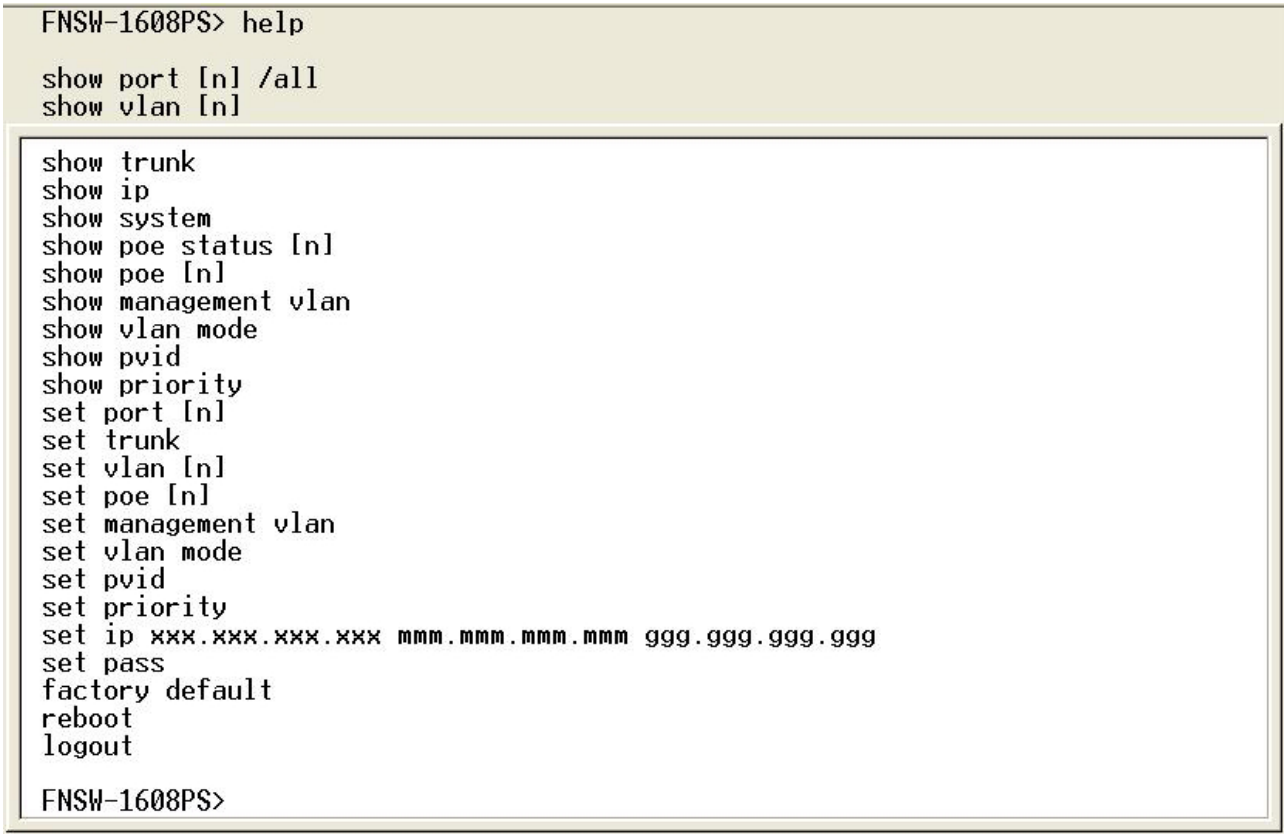


Figure 4-4 FNSW-1608PS available commands screen

Command	Description
Show port [n] / all	Show per port or all port current status of FNSW-1608PS.
Show VLAN [n]	Show current VLAN group status of FNSW-1608PS.
Show trunk	Show current trunk group status of FNSW-1608PS.
Show IP	Show current IP subnet address of FNSW-1608PS.
Show system	Show firmware version, Mac address and IP address of FNSW-1608PS.
Show PoE status[n]	Show per PoE port status(On or Off) of FNSW-1608PS.
Show PoE(n)	Show per PoE port disable/enable status and priority of FNSW-1608PS.
Show management VLAN	Show current management VLAN of FNSW-1608PS.
Show VLAN mode	Show current VLAN mode of FNSW-1608PS.
Show PVID	Show per port PVID of FNSW-1608PS.
Show Priority	Show current priority status of FNSW-1608PS.
Set port [n]	Set per port auto-negotiation speed duplex mode, QoS and bandwidth control, Insert priority tagging function of FNSW-1608PS.

Set Trunk	Disable or enable trunk group of FNSW-1608PS.
Set VLAN(n)	Configure port-based VLAN group of FNSW-1608PS.
Set PoE[n]	Configure per PoE port of FNSW-1608PS.
Set management VLAN	Assign management VLAN of FNSW-1608PS.
Set VLAN mode	Disable or enable port-based VLAN function of FNSW-1608PS.
Set PVID	Assign PVID on each port of FNSW-1608PS.
Set priority	Allow to configure the priority setting of FNSW-1608PS.
Set IP xxx.xxx.xxx.xxx, mmm.mmm.mmm.mmm, ggg.ggg.ggg.ggg	Assign IP address, subnet mask, gateway of FNSW-1608PS.
Set Pass	Change the default password of FNSW-1608PS, the maximum length is 4 characters.
Factory Default	Reset the FNSW-1608PS to factory default mode.
Reboot	Reboot the FNSW-1608PS.
Logout	Logout console interface of FNSW-1608PS.

Table 4-1 Detail description of FNSW-1608PS available commands

Notice: Only accept command in lowercase letter under console interface.

4.4.2 Show command

From the main menu screen (see Figure 4-3), input **"show"** and press enter. The show command list screen in Figure 4-5 appears.

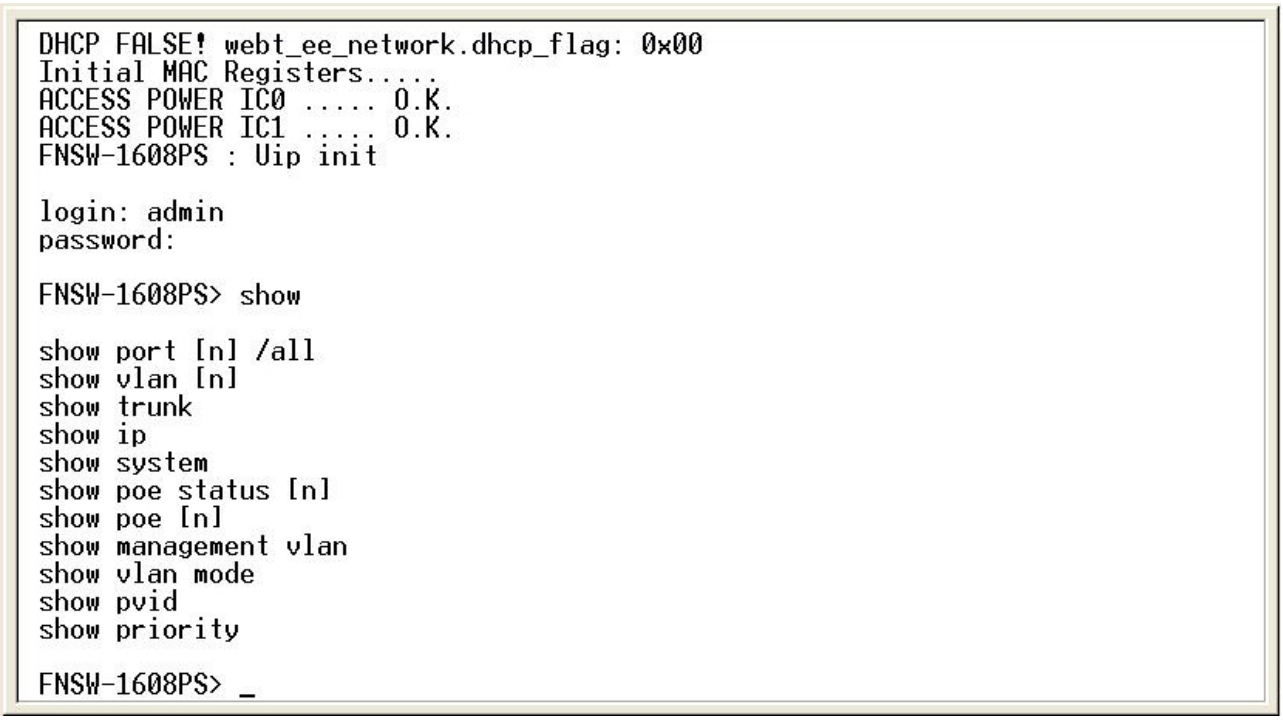


Figure 4-5 Show command list screen

This show command list contains eleven items:

Show port [n] / all: Please refer to **chapter 4.4.2.1.**

Show vlan [n]: Please refer to **chapter 4.4.2.2.**

Show trunk: Please refer to **chapter 4.4.2.3.**

Show ip: Please refer to **chapter 4.4.2.4**

Show system: Please refer to **chapter 4.4.2.5**

Show poe status [n]: Please refer to **chapter 4.4.2.6**

Show poe [n]: Please refer to **chapter 4.4.2.7**

Show management vlan: Please refer to **chapter 4.4.2.8**

Show vlan mode: Please refer to **chapter 4.4.2.9**

Show pvid: Please refer to **chapter 4.4.2.10**

Show priority: Please refer to **chapter 4.4.2.11**

4.4.2.1 Show port[n] / all

Display the status on each port of FNSW-1608PS, these two commands allows you to view the port status of the Switch and the correct usage is shown as below:

Show port [n]: n=1-16, to view per port status of FNSW-1608PS. The screen in Figure 4-6 appears.

Show port: to view all port status of FNSW-1608PS. The screen in Figure 4-7 appears.

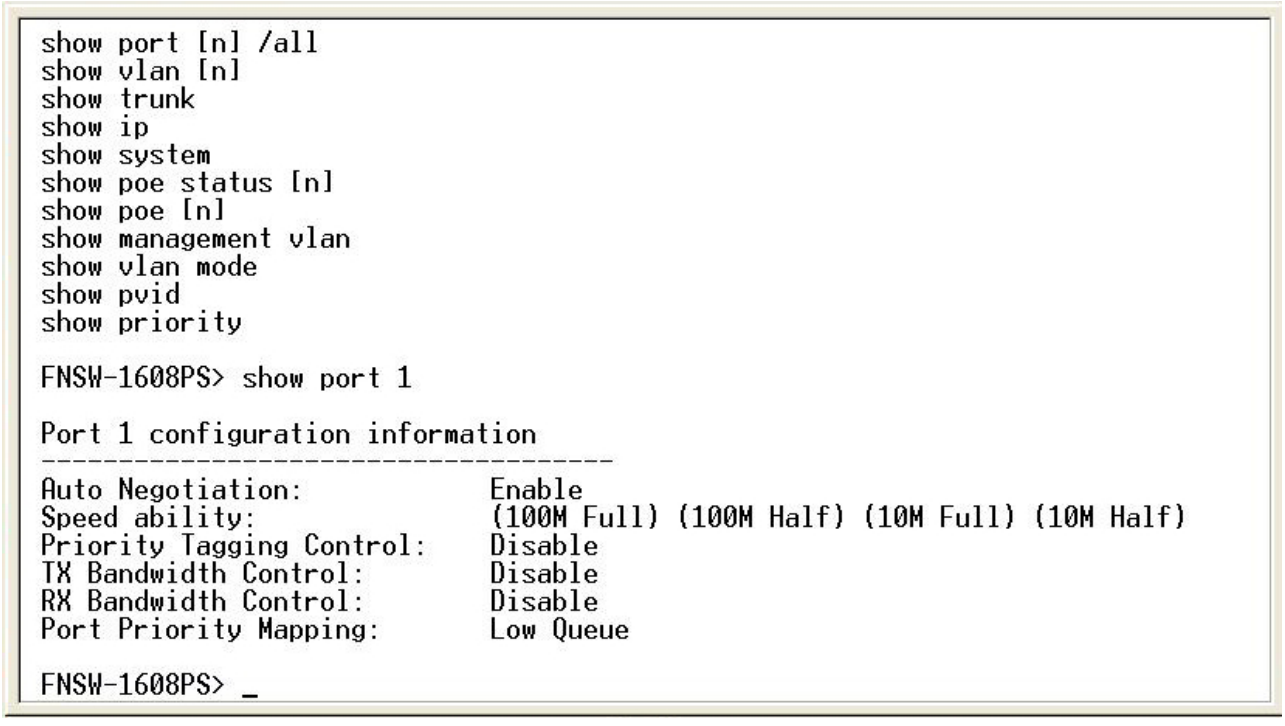


Figure 4-6 Per port Status screen

```
password:

FNSW-1608PS> show port

Port     Link   Speed   Duplex   FlowControl
-------------------------------------------
Port  1   Down     10M     half      Enable
Port  2   Down     10M     half      Enable
Port  3   Down     10M     half      Enable
Port  4   Down     10M     half      Enable
Port  5   Down     10M     half      Enable
Port  6   Down     10M     half      Enable
Port  7   Down     10M     half      Enable
Port  8   Down     10M     half      Enable
Port  9   Down     10M     half      Enable
Port 10   Down     10M     half      Enable
Port 11   Down     10M     half      Enable
Port 12   Down     10M     half      Enable
Port 13   Down     10M     half      Enable
Port 14   Down     10M     half      Enable
Port 15   Up     100M     full      Enable
Port 16   Up     100M     full      Enable

FNSW-1608PS> _
```

Figure 4-7 All port Status screen

4.4.2.2 Show vlan[n]

Display one specific VLAN group status of FNSW-1608PS, the correct usage is shown as below:

Show vlan [n]: n=1-16, to view one specific VLAN group status of FNSW-1608PS, the VLAN group status screen in Figure 4-8 appears.

```
vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
  1  * * * * * * * * *  *  *  *  *  *  *  *

FNSW-1608PS> show vlan 2

vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
  2  *                                    *

FNSW-1608PS> show vlan 3

vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
  3    *                                  *

FNSW-1608PS> show vlan 4

vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
  4      *                                *

FNSW-1608PS> show vlan 5

vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
  5        *                              *

FNSW-1608PS> show vlan _
```

Figure 4-8 VLAN group status screen

4.4.2.3 Show trunk

Display the current trunk group status of FNSW-1608PS, the trunk group status screen in Figure 4-9 appears.

```
FNSW-1608PS : Eth init......done!
current tick:00000003 sec
EEPROM Init...
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
InValid EEPROM!!!
Restore Default Value...
Show MY IP Address:192.168.0.100
Initial EEPROM.....
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> show trunk

Port 1,2 Trunking :         Disable
Port 13,14,15,16 Trunking : Disable

FNSW-1608PS>
```

Figure 4-9 Trunk group status screen

4.4.2.4 Show ip

Display the current IP address, netmask and gateway of FNSW-1608PS, the IP subnet address information screen in Figure 4-10 appears.

```
current tick:00000003 sec
EEPROM Init...
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
InValid EEPROM!!!
Restore Default Value...
Show MY IP Address:192.168.0.100
Initial EEPROM.....
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> show ip

IP:  192.168.0.100
Netmask: 255.255.255.0
Gateway: 192.168.0.1

FNSW-1608PS> _
```

Figure 4-10 IP subnet address information screen

4.4.2.5 Show system

Display the system information of FNSW-1608PS, such as software version, mac address and IP address. The system information screen in Figure 4-11 appears.

```
EEPROM: Data valid
Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.100)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> show system

PLANET FNSW-1608PS
Software Version: 1.0
MAC: 00-30-4f-00-00-00
IP: 192.168.0.100

FNSW-1608PS>
```

Figure 4-11 System information screen

4.4.2.6 Show poe status [n]

Display the poe link status on each port of FNSW-1608PS, this command allows you to view per poe port link status of the Switch and the correct usage is shown as below:

Show poe status [n]: n=1-8, to view per poe port link status of FNSW-1608PS. The per poe port link status screen in Figure 4-12 appears.

```
login: admin
password:

FNSW-1608PS> show poe status 1

Port1 On/Off: Off

FNSW-1608PS> show poe status 2

Port2 On/Off: Off

FNSW-1608PS> show poe status 3

Port3 On/Off: Off

FNSW-1608PS> show poe status 4

Port4 On/Off: Off

FNSW-1608PS> show poe status 5

Port5 On/Off: Off

FNSW-1608PS> show poe status 6
```

Figure 4-12 Per poe port link status screen

4.4.2.7 Show poe [n]

Display the poe status on each port of FNSW-1608PS, this command allows you to view per poe port status of the Switch and the correct usage is shown as below:

Show poe [n]: n=1-8, to view per poe port status of FNSW-1608PS. The per poe port status screen in Figure 4-13 appears.

```
Port1 POE: Enable

POE Priority: 0

FNSW-1608PS> show poe 2

Port2 POE: Enable

POE Priority: 0

FNSW-1608PS> show poe 3

Port3 POE: Enable

POE Priority: 0

FNSW-1608PS> show poe 4

Port4 POE: Enable

POE Priority: 0

FNSW-1608PS> _
```

Figure 4-13 Per poe port status screen

4.4.2.8 Show management vlan

Display the management vlan of FNSW-1608PS, the management vlan display screen in Figure 4-14 appears.

```
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
EEPROM: Data valid
Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.100)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> show management vlan

The management vlan is vlan 1

FNSW-1608PS>
```

Figure 4-14 Display management VLAN screen

4.4.2.9 Show vlan mode

Display the current vlan mode of FNSW-1608PS, the vlan mode display screen in Figure 4-15 appears.

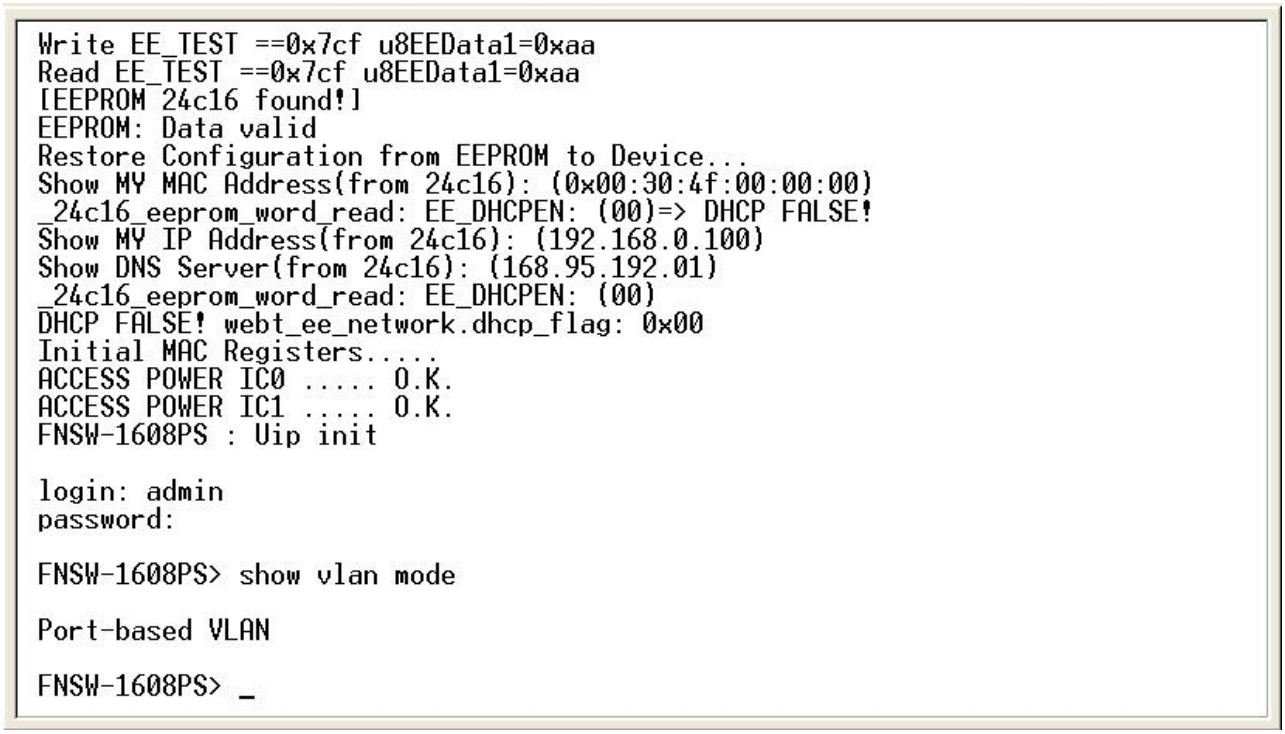


Figure 4-15 Display VLAN mode screen

4.4.2.10 Show pvid

Display the current per port pvid of FNSW-1608PS, the per port pvid display screen in Figure 4-16 appears.

Figure 4-16 Display pvid screen

4.4.2.11 Show priority

Display the current priority status of FNSW-1608PS, the priority status display screen in Figure 4-17 appears.

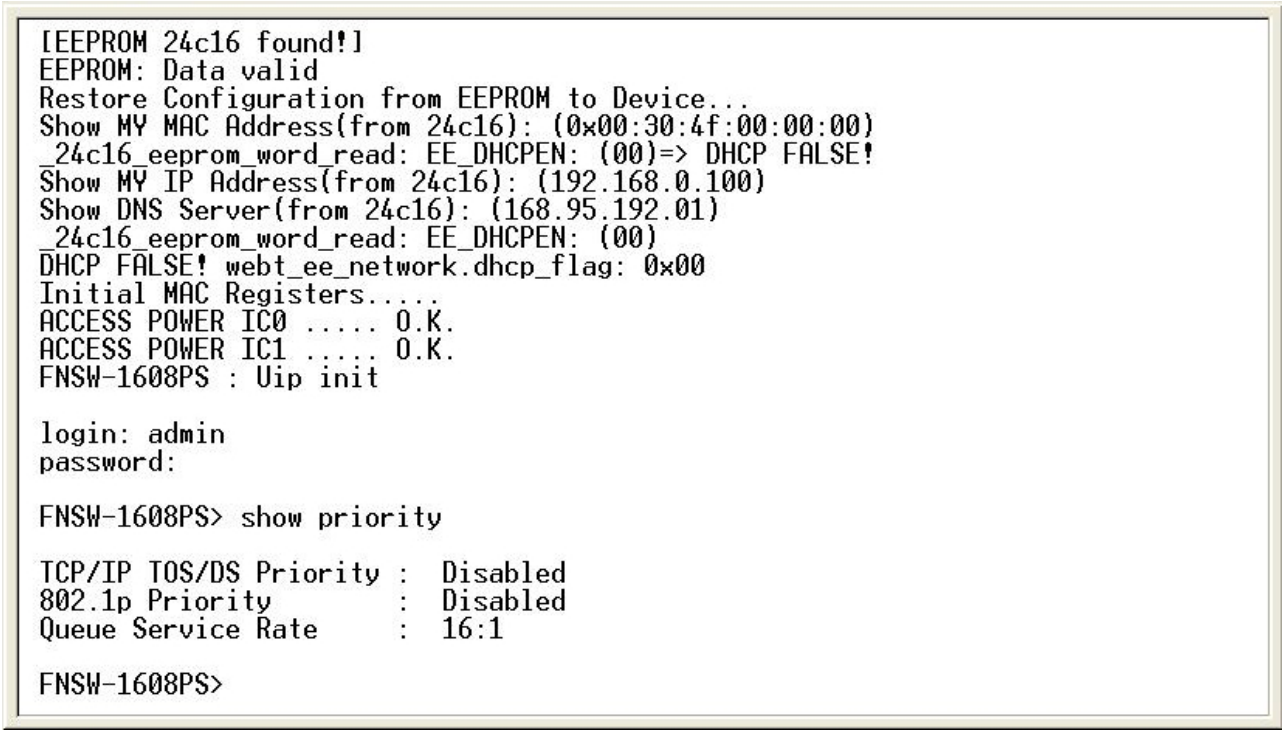

[EEPROM 24c16 found!]
EEPROM: Data valid
Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.100)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init
login: admin
password:
FNSW-1608PS> show priority
TCP/IP TOS/DS Priority : Disabled
802.1p Priority : Disabled
Queue Service Rate : 16:1
FNSW-1608PS>

Figure 4-17 Display priority screen

4.4.3 Set command

From the main menu screen (see Figure 4-3), input **"set"** and press enter. The set command list screen in Figure 4-18 appears.

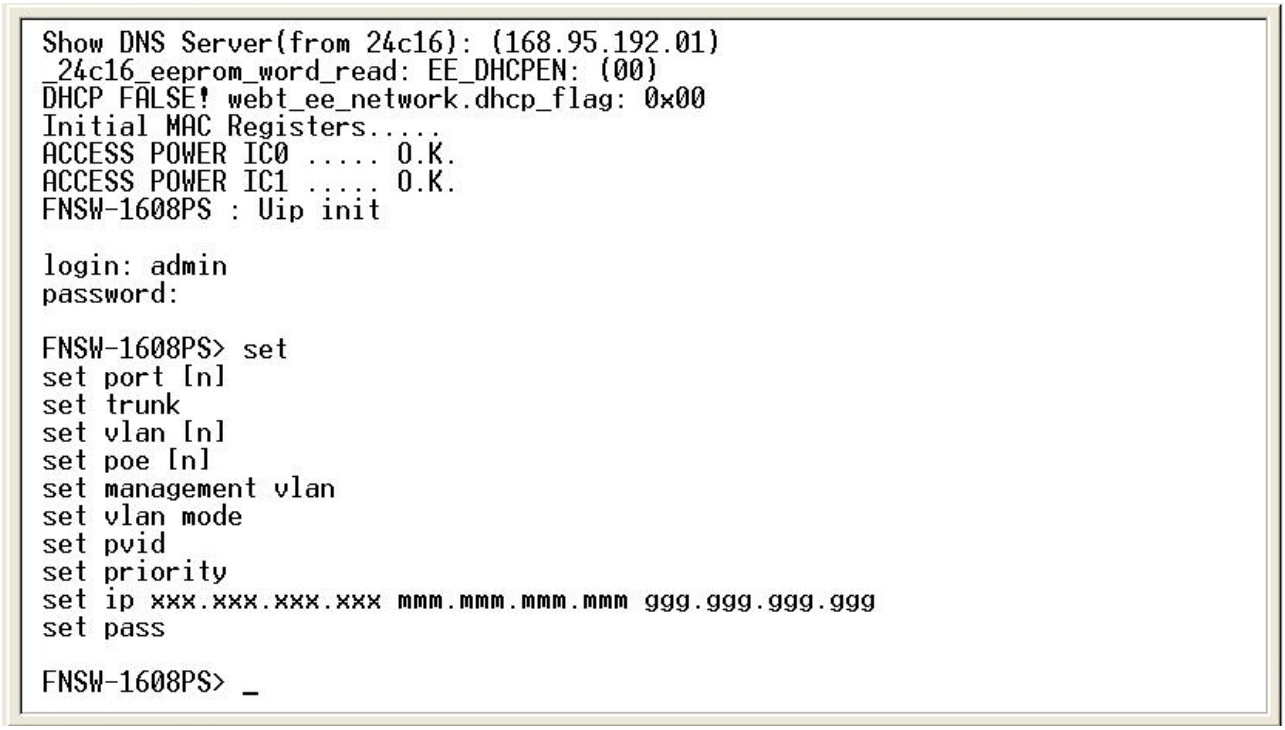


Figure 4-18 Set command list screen

This set command list contains ten items:

Set port [n]: Please refer to **chapter 4.4.3.1.**

Set trunk: Please refer to **chapter 4.4.3.2.**

Set vlan [n]: Please refer to **chapter 4.4.3.3.**

Set poe [n]: Please refer to **chapter 4.4.3.4.**

Set management vlan: Please refer to **chapter 4.4.3.5**

Set vlan mode: Please refer to **chapter 4.4.3.6**

Set pvid: Please refer to **chapter 4.4.3.7**

Set priority: Please refer to **chapter 4.4.3.8**

Set ip xxx.xxx.xxx.xxx.mmm.mmm.mmm.mmm.ggg.ggg.ggg.ggg: Please refer to **chapter 4.4.3.9**

Set pass: Please refer to **chapter 4.4.3.10**

4.4.3.1 Set port [n]

This command allows configuring per port parameters of FNSW-1608PS. the correct usage is shown as below:

Set port [n]: n=1-16, to configuring per port parameters of FNSW-1608PS. The configuring per port parameters screen in Figure 4-19 appears and the detail description shown in table 4-2.

```
FNSW-1608PS> set port 1
Auto Negotiation (1)Enable (2)Disable: 1
Speed Ability '100M Full' (1)Yes(2)No: 1
Speed Ability '100M Half' (1)Yes(2)No: 1
Speed Ability '10M Full' (1)Yes(2)No: 1
Speed Ability '10M Half' (1)Yes(2)No: 1
Priority-Tagging Control (1)Disable (2)Remove Tag (3)Insert Tag: 1
TX Bandwidth Control (1)Disable (2)128K (3)256K (4)512K (5)1M (6)2M (7)4M (8)8M
: 1
RX Bandwidth Control (1)Disable (2)128K (3)256K (4)512K (5)1M (6)2M (7)4M (8)8M
: 1
Port Priority Mapping (1)High Queue (2)Low Queue: 1

Port 1 configuration information
------------------------------------
Auto Negotiation:            Enable
Speed ability:               (100M Full) (100M Half) (10M Full) (10M Half)
Priority Tagging Control:    Disable
TX Bandwidth Control:        Disable
RX Bandwidth Control:        Disable
Port Priority Mapping:       High Queue


FNSW-1608PS>
```

Figure 4-19 Port Configuration screen

Object	Description
Auto Negotiation	Allow disable or enable Auto negotiation of each port.
Speed Ability '100M Full'	Allow set per port run at 100Mbps full speed mode.
Speed Ability '100M Half"	Allow set per port run at 100Mbps half speed mode.
Speed Ability '10M Full'	Allow set per port run at 10Mbps full speed mode.
Speed Ability '10M Half"	Allow set per port run at 10Mbps half speed mode.
Priority –Tagging control	Allow disable or remove or insert priority tagging on each port, the available options are Disable, Remove Tag, Insert Tag.
TX Bandwidth control	Allow assign per port transmit bandwidth, the available options are Disable, 128K, 256K, 512K,1M,2M,4M,8M.
RX Bandwidth control	Allow assign per port receive bandwidth, the available options are Disable, 128K, 256K, 512K,1M,2M,4M,8M.
Port Priority Mapping	Allow assign low queue or high queue on each port.

Table 4-2 Descriptions of the Port Configuration screen Objects

4.4.3.2 Set trunk

This command allows disable or enable trunk function of two ports or four ports from FNSW-1608PS. The trunk function setting screen in Figure 4-20 appears

```
Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.100)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> set trunk

Port 1,2 Trunking (1)Enable (2)Disable:         2
Port 13,14,15,16 Trunking (1)Enable (2)Disable: 1

Port 1,2 Trunking :         Disable
Port 13,14,15,16 Trunking :  Enable

FNSW-1608PS>
```

Figure 4-20 Trunk Configuration screen

4.4.3.3 Set vlan [n]

This command allows configuring sixteen port-based VLAN groups of FNSW-1608PS. the correct usage is shown as below:
Set vlan [n]: n=1-16, to configuring sixteen port-based VLAN groups of FNSW-1608PS. The configuring port-based VLAN groups screen in Figure 4-21 appears

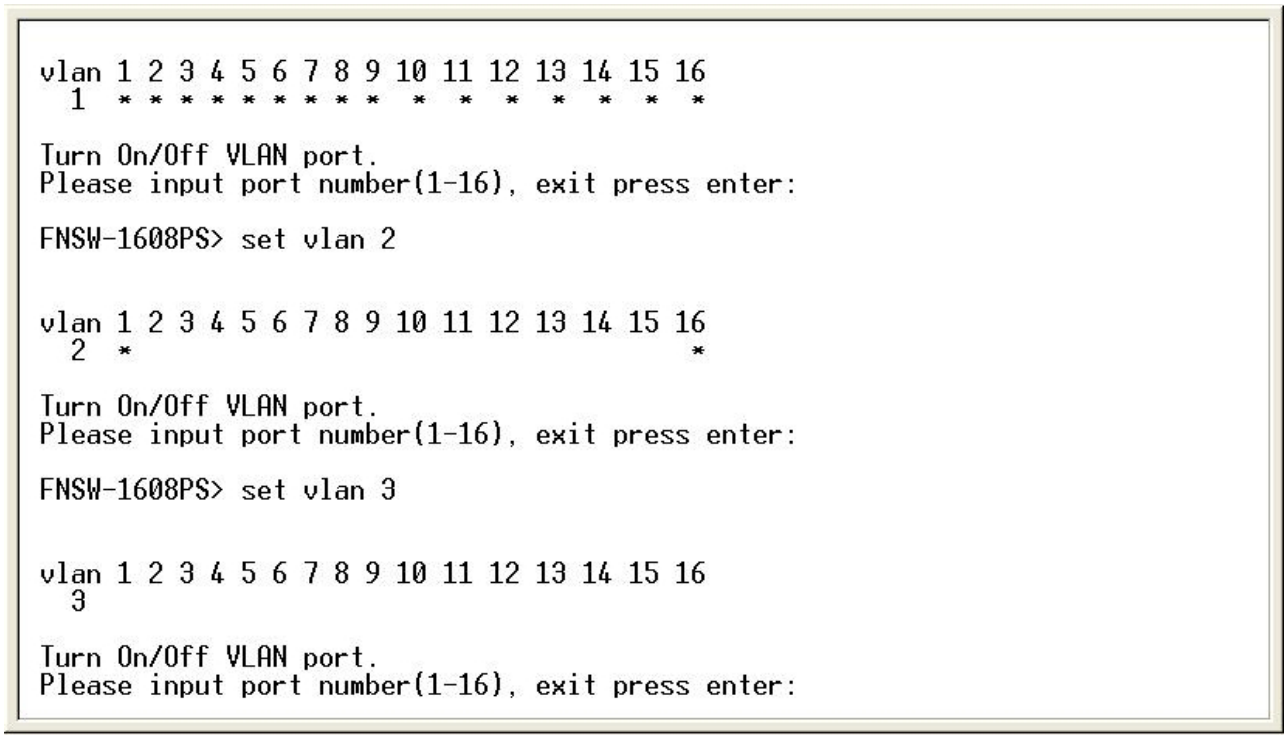

vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1 * * * * * * * * * * * * * * * *
Turn On/Off VLAN port.
Please input port number(1-16), exit press enter:
FNSW-1608PS> set vlan 2
vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
2 * *
Turn On/Off VLAN port.
Please input port number(1-16), exit press enter:
FNSW-1608PS> set vlan 3
vlan 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3
Turn On/Off VLAN port.
Please input port number(1-16), exit press enter:

Figure 4-21 Port based VLAN Configuration screen

4.4.3.4 Set poe [n]

This command allows configuring per poe port parameters of FNSW-1608PS. the correct usage is shown as below:

Set poe [n]: n=1-8, to configuring per poe port parameters of FNSW-1608PS. The configuring per poe port parameters screen in Figure 4-22 appears and the detail description shown in table 4-3.

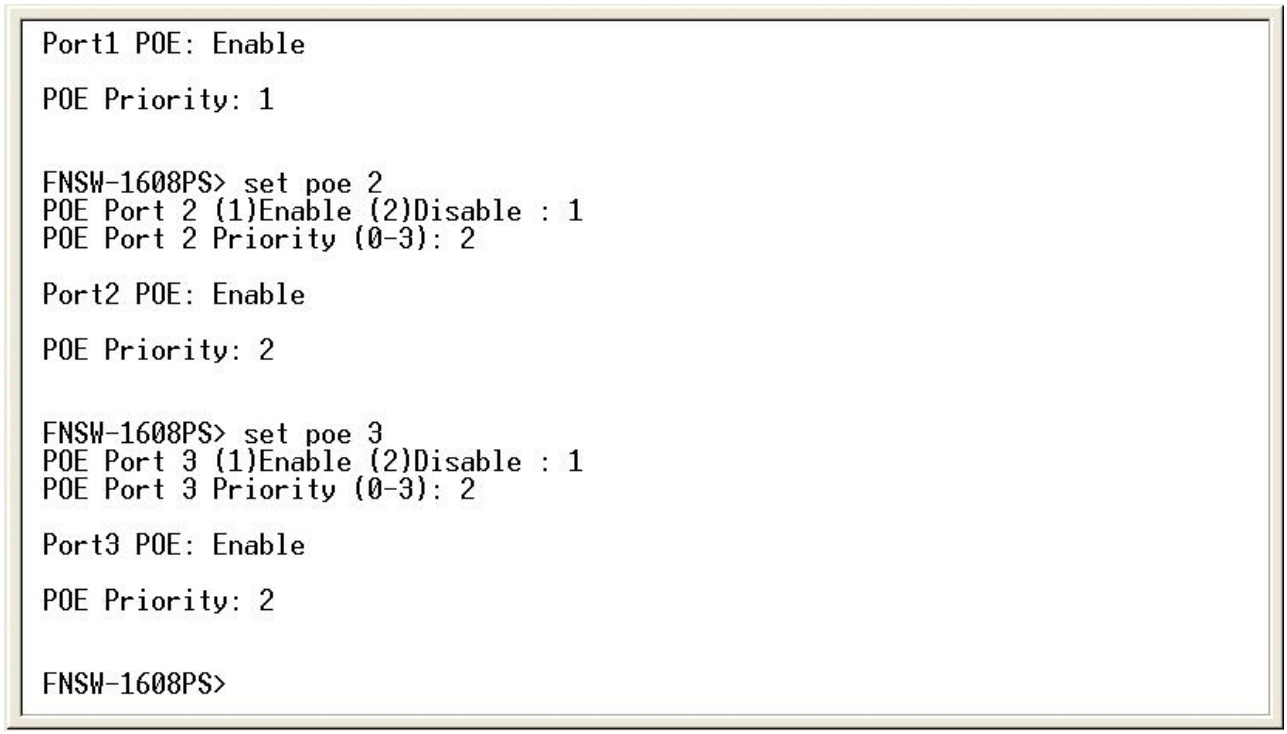

Port1 POE: Enable
POE Priority: 1
FNSW-1608PS> set poe 2
POE Port 2 (1)Enable (2)Disable : 1
POE Port 2 Priority (0-3): 2
Port2 POE: Enable
POE Priority: 2
FNSW-1608PS> set poe 3
POE Port 3 (1)Enable (2)Disable : 1
POE Port 3 Priority (0-3): 2
Port3 POE: Enable
POE Priority: 2
FNSW-1608PS>

Figure 4-22 PoE port Configuration screen

Object	Description
POE Port 1-8 (1) Enable (2) Disable	Allow disable or enable each POE port.
POE Port 1-8 Priority (0-3)	Assign POE power provision priority (0-3) to each POE port.

Table 4-3 Descriptions of PoE port Configuration screen Objects

4.4.3.5 Set management vlan

This command allows assign one VLAN as management VLAN of FNSW-1608PS. Only the assigned VLAN group can manage

The management vlan function setting screen in Figure 4-23 is as below

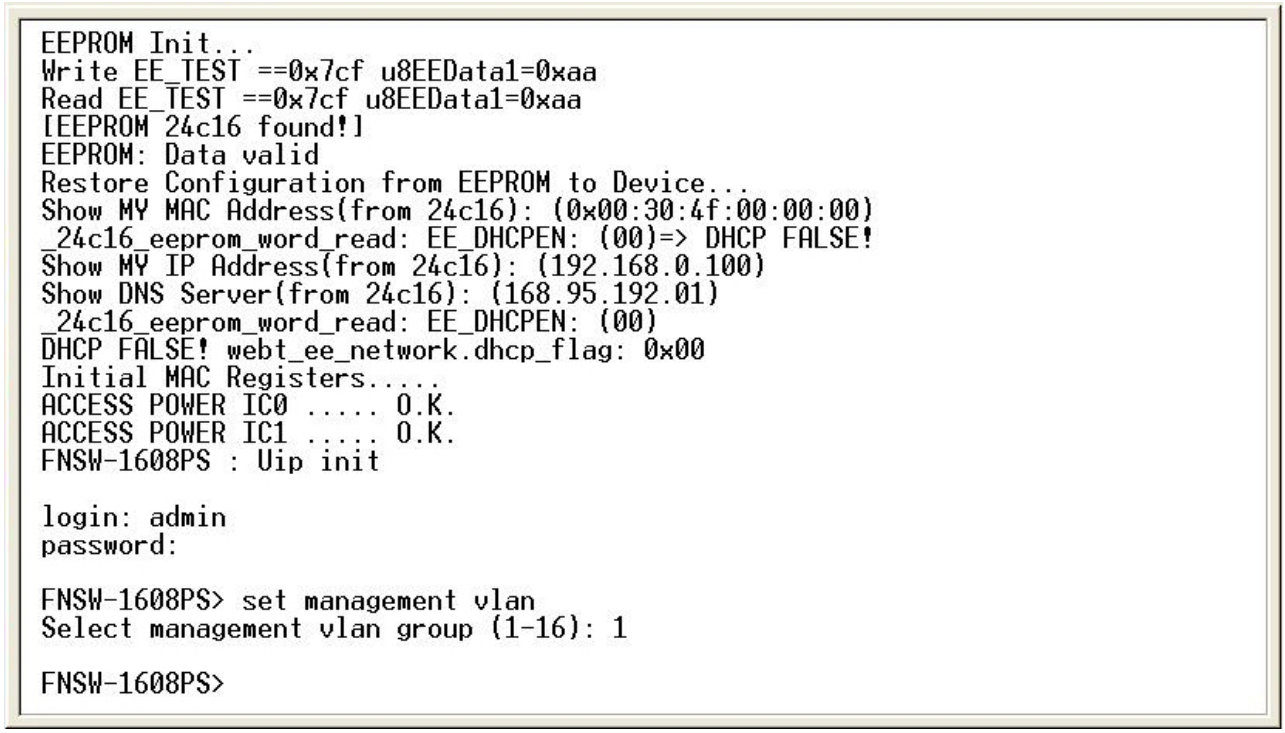


Figure 4-23 Management VLAN Configuration screen

Notice: Before use this function, please enable port-based VLAN function and assign member port into 16 port-based VLAN groups.

4.4.3.6 Set vlan mode

This command allows disable or enable port-based vlan function of FNSW-1608PS, the vlan mode setting screen in Figure 4-24 appears

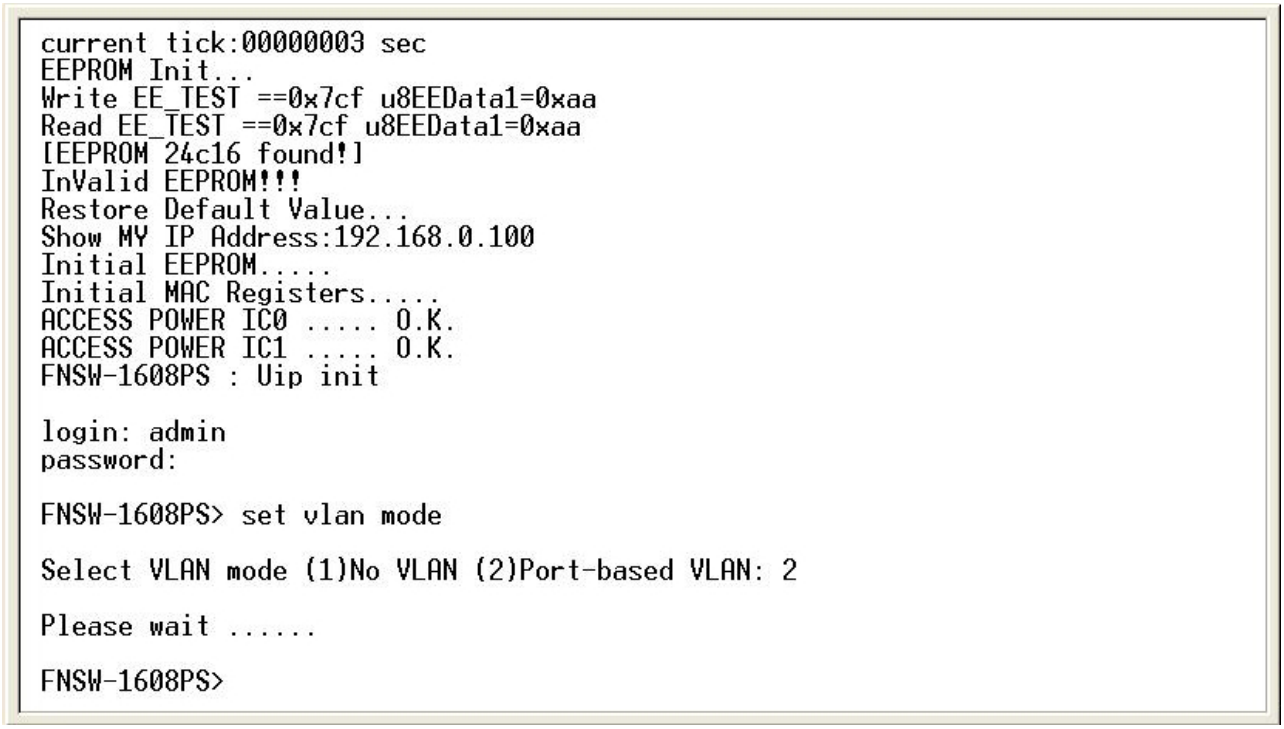


Figure 4-24 VLAN mode Configuration screen

4.4.3.7 Set pvid

This command allows assign PVID of each port from FNSW-1608PS, the PVID setting screen in Figure 4-25 appears.

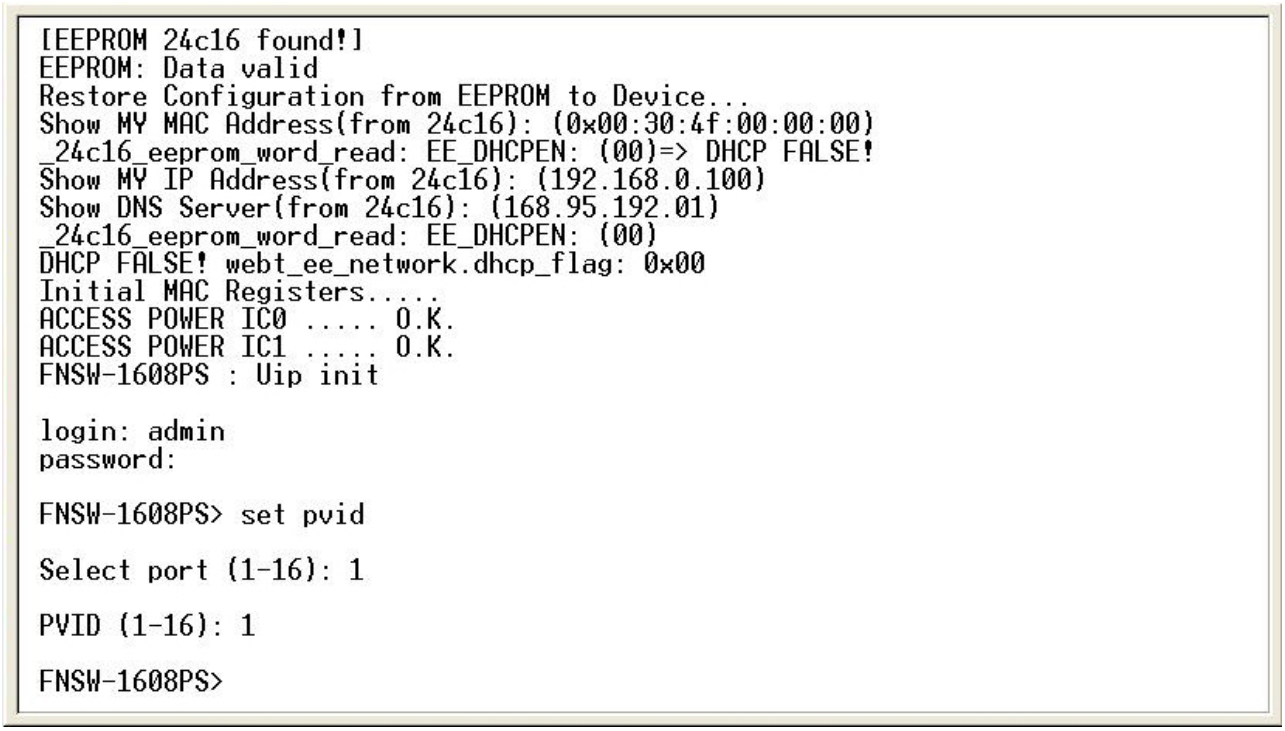


Figure 4-25 PVID Configuration screen

4.4.3.8 Set priority

This command allows set priority function of FNSW-1608PS; the available options are TCP/IP TOS/DS Priority Disable or Enable, 802.1p Priority Disable or Enable, Queue Service Rate (4:1, 8:1, 16:1, N). The priority setting screen in Figure 4-26 appears.

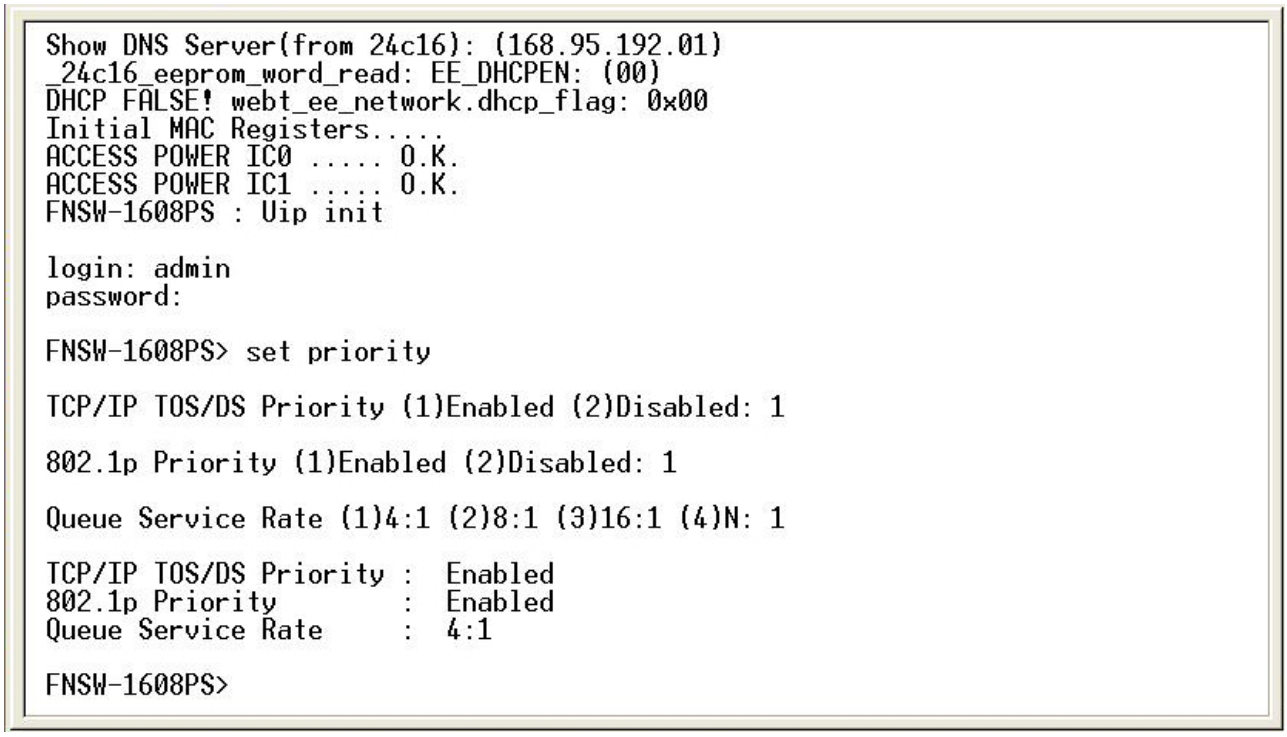

Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init
login: admin
password:
FNSW-1608PS> set priority
TCP/IP TOS/DS Priority (1)Enabled (2)Disabled: 1
802.1p Priority (1)Enabled (2)Disabled: 1
Queue Service Rate (1)4:1 (2)8:1 (3)16:1 (4)N: 1
TCP/IP TOS/DS Priority : Enabled
802.1p Priority : Enabled
Queue Service Rate : 4:1
FNSW-1608PS>

Figure 4-26 Priority Configuration screen

4.4.3.9 Set ip xxx.xxx.xxx.xxx.mmm.mmm.mmm.mmm.ggg.ggg.ggg.ggg

This command allows assign IP address, netmask and gateway of FNSW-1608PS. the correct usage is shown as below:

set ip 192.168.0.1 255.255.255.0 192.168.0.254 and press **<Enter>**

If the IP is successfully configured, the switch will automatically restart as the following screens. After reboot the Switch and power on completed, you can use the new IP address access of FNSW-1608PS.

The IP subnet address setting screen in Figure 4-27 & 4-28 appears.

```
Show MY IP Address(from 24c16): (192.168.0.100)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> set ip 192.168.0.1 255.255.255.0 192.168.0.254
[1]
[2]
[3]

The IP sets to 192.168.0.1
The Netmask sets to 255.255.255.0
The Gateway sets to 192.168.0.254

The system will restart.
FNSW-1608PS>
Reset System...
```

Figure 4-27 IP subnet address configuration screen

```
ip inspc.:reg.0x7001 = 0x3f
done<-]

FNSW-1608PS : System timer init......done!
FNSW-1608PS : Eth init......done!
current tick:00000003 sec
EEPROM Init...
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
EEPROM: Data valid
Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.1)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login:
```

Figure 4-28 IP subnet address configuration screen

4.4.3.10 Set pass

This command allows assign password of FNSW-1608PS. The password setting screen in Figure 4-29 appears.

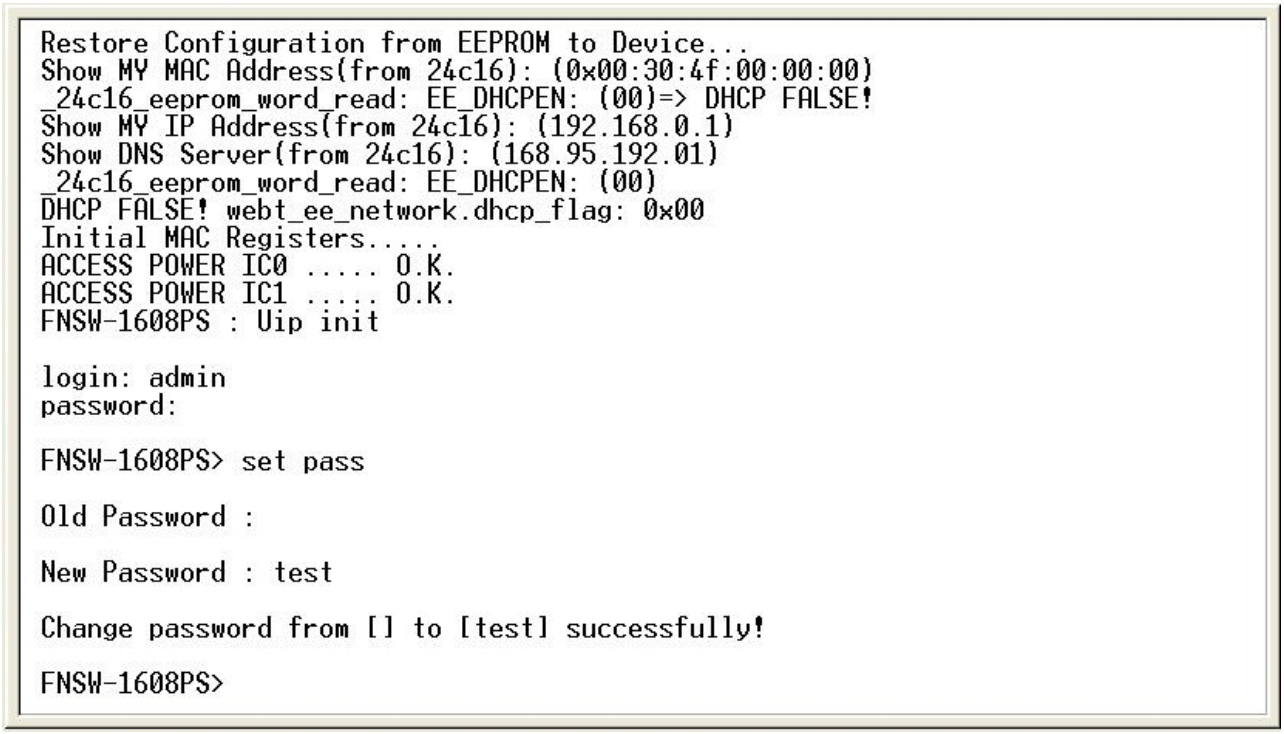

Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.1)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init
login: admin
password:
FNSW-1608PS> set pass
Old Password :
New Password : test
Change password from [] to [test] successfully!
FNSW-1608PS>

Figure 4-29 Password configuration screen

Notice:

1. For security reason, please change and memorize the new password after this first setup.
2. The maximum length is 4 characters.

4.4.4 Factory default

This command allows rest FNSW-1608PS to factory default mode. The factory default screen in Figure 4-30 & 4-31 appears.

```
FNSW-1608PS : System timer init......done!
FNSW-1608PS : Eth init......done!
current tick:00000003 sec
EEPROM Init...
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
InValid EEPROM!!!
Restore Default Value...
Show MY IP Address:192.168.0.100
Initial EEPROM.....
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> factory default
The system will restart.
FNSW-1608PS>
Reset System...
```

Figure 4-30 Factory default screen

```
TF33xFU:check Magic Code...[ok]
FNSW_1608PS : System init
[sys_init():->
wait state:reg.0x706d = 0x28
ip inspc.:reg.0x7001 = 0x3f
done<-]

FNSW-1608PS : System timer init......done!
FNSW-1608PS : Eth init......done!
current tick:00000003 sec
EEPROM Init...
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
InValid EEPROM!!!
Restore Default Value...
Show MY IP Address:192.168.0.100
Initial EEPROM.....
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login:
```

Figure 4-31 Factory default screen

4.4.5 Reboot

This command allows reboot FNSW-1608PS, the reboot screen in Figure 4-32 & 4-33 appears.

```
EEPROM Init...
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
EEPROM: Data valid
Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.100)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login: admin
password:

FNSW-1608PS> reboot
The system will restart.
FNSW-1608PS>
Reset System...
```

Figure 4-32 Switch reboot screen

```
ip inspc.:reg.0x7001 = 0x3f
done<-]

FNSW-1608PS : System timer init......done!
FNSW-1608PS : Eth init......done!
current tick:00000003 sec
EEPROM Init...
Write EE_TEST ==0x7cf u8EEData1=0xaa
Read EE_TEST ==0x7cf u8EEData1=0xaa
[EEPROM 24c16 found!]
EEPROM: Data valid
Restore Configuration from EEPROM to Device...
Show MY MAC Address(from 24c16): (0x00:30:4f:00:00:00)
_24c16_eeprom_word_read: EE_DHCPEN: (00)=> DHCP FALSE!
Show MY IP Address(from 24c16): (192.168.0.100)
Show DNS Server(from 24c16): (168.95.192.01)
_24c16_eeprom_word_read: EE_DHCPEN: (00)
DHCP FALSE! webt_ee_network.dhcp_flag: 0x00
Initial MAC Registers.....
ACCESS POWER IC0 ..... O.K.
ACCESS POWER IC1 ..... O.K.
FNSW-1608PS : Uip init

login:
```

Figure 4-33 Switch reboot screen

4.4.6 Logout

This command provides logout the FNSW-1608PS, the screen in Figure 4-34 appears.

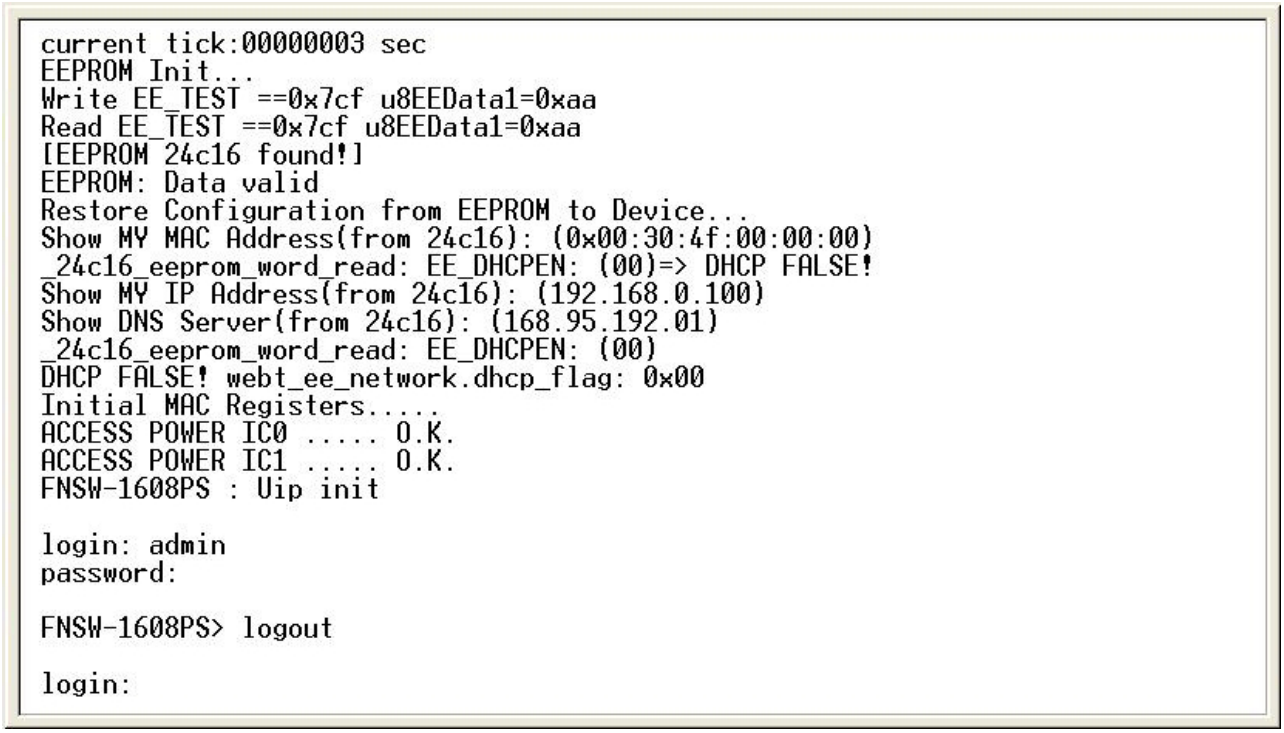


Figure 4-34 FNSW-1608PS Logout screen

5. WEB MANAGEMENT

Before login the Web interface of FNSW-1608PS, please setup the **"IP Address"** with local serial console port (RS232 port) and use this IP address to configure FNSW-1608PS through the **Web** interface.

Or modify your PC's IP domain to the same with FNSW-1608PS then use the default IP address (***192.168.0.100***) to remote configure FNSW-1608PS through the **Web** interface.

5.1 Login in to the Switch

To access the Web-browser interface you must first enter the user name, the default user name is **"admin"** without password**.** You will see the following screen comes out on the Web browser program:

Figure 5-1 The FNSW-1608PS login Web Page screen

After the User name and Password is entered, you will see the web main menu screen.

Figure 5-2 The web main menu screen of FNSW-1608PS

5-2 Port Status

This section provides current status of each port from FNSW-1608PS, the screen in Figure 5-3 appears and Table 5-1 describes the port status object of switch.

Figure 5-3 FNSW-1608PS Port Status Web Page screen

Object	Description
Port	Indicate port 1 to port 16.
Link	The state of the link, indicating a valid link partner device. **"Up"** means a device is successful connected to the port. **"Down"** means no device is connected.
Speed	Display the **10Mbps or 100Mbps** speed state of each port on FNSW-1608PS.
Duplex	Display half or full duplex mode of each port on FNSW-1608PS.
Flow Control	Display the flow control **Disable** or **Enable** state of each port on FNSW-1608PS.
Auto Negotiation	Display the Auto negotiation **Disable** or **Enable** state of each port on FNSW-1608PS.

Table 5-1 Descriptions of the Port Status screen Objects

5-3 Port Setup

This section introduces detail settings of per port on FNSW-1608PS, the screen in Figure 5-4 appears and table 5-2 descriptions the Port Controls objects of switch.

Figure 5-4 FNSW-1608PS Port Setup Web Page screen

Object	Description
Auto Negotiation	Allow disable or enable Auto negotiation of each port.
Speed	Allow set per port run at 10/100Mbps half / full speed mode.
Priority –Tagging control	Allow disable or remove or insert priority tagging on each port, the available options are Disable, Remove Tag, Insert Tag.
TX Bandwidth control	Allow assign per port transmit bandwidth, the available options are Disable, 128K, 256K, 512K,1M,2M,4M,8M.
RX Bandwidth control	Allow assign per port receive bandwidth, the available options are Disable, 128K, 256K, 512K,1M,2M,4M,8M.
Port Priority Mapping	Allow assign low queue or high queue on each port.

Table 5-2 Descriptions of the Port Setup screen Objects

5-4 VLAN Setup

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain. It allows you to isolate network traffic so only members of the VLAN receive traffic from the same VLAN members. The FNSW-1608PS supports port-based VLAN function. In the default configuration with VLAN disable, the screen in Figure 5-5 appears.

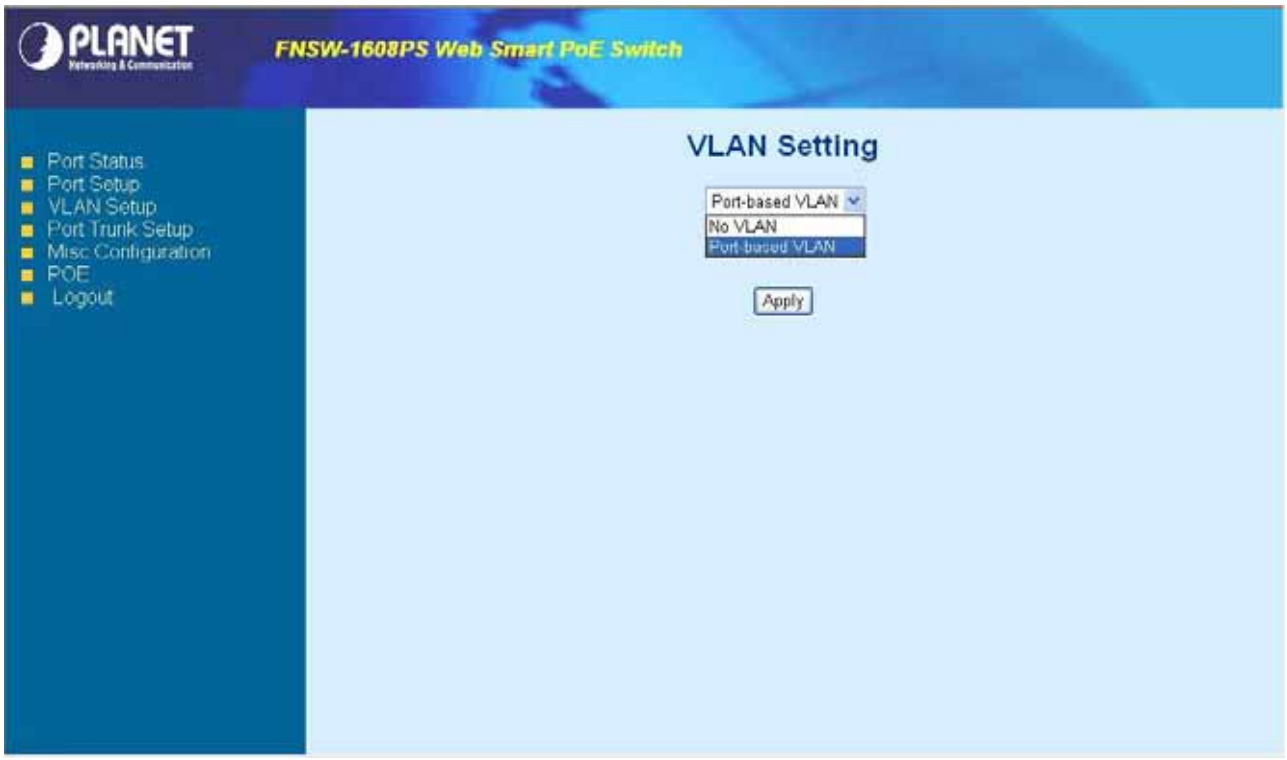


Figure 5-5 FNSW-1608PS VLAN Setting Web Page screen

Select **"Port-based VLAN"** and press **"Apply"** button, to enable the port-based VLAN function then continue configure sixteen port-based VLAN groups as your request. After setup completed, please press **"Apply"** to take affect and press **"Next"** for next page. The screen in Figure 5-6 & 5-7 appears.

Figure 5-6 FNSW-1608PS port-based VLAN Setting Web Page screen

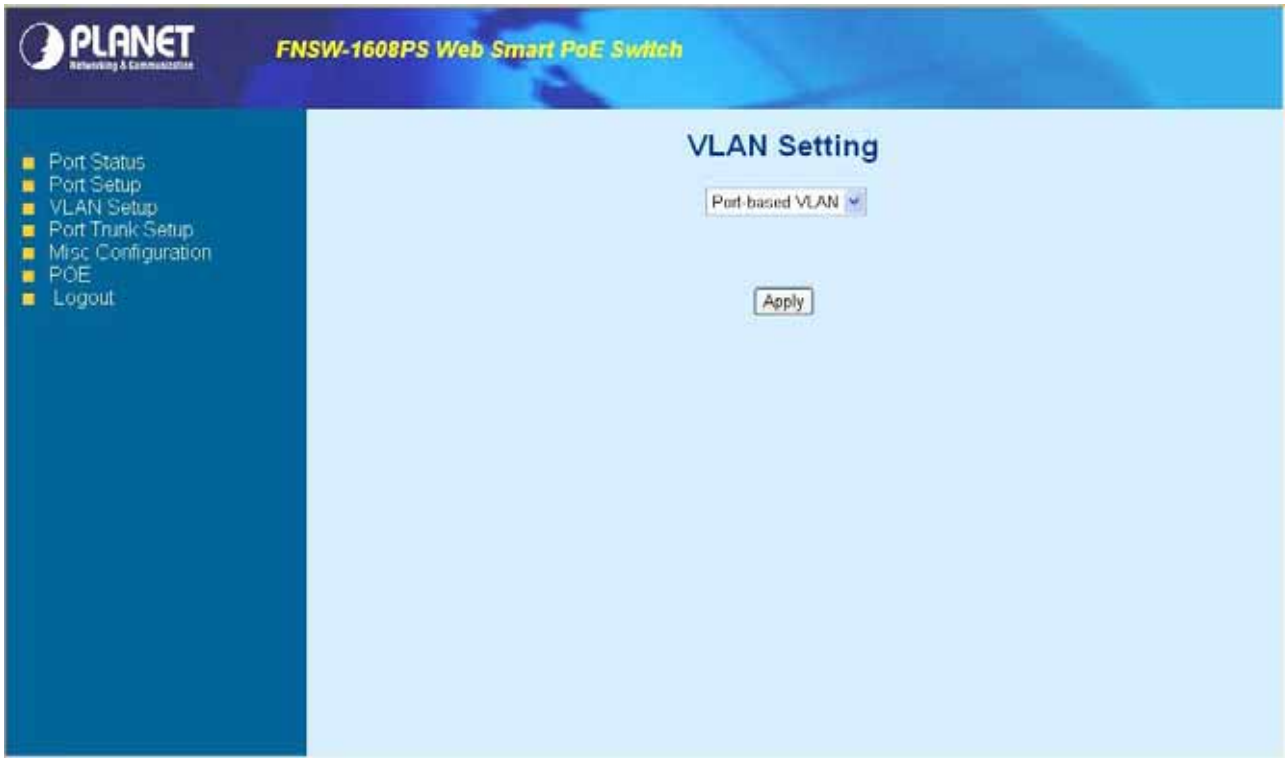


Figure 5-7 FNSW-1608PS port-based VLAN Setting Web Page screen

5.4.1 VLAN setting example:

VLAN scenario

1. Port 16 is the file server port for all the workstations

2. Port 1 to port 15 is different devices that do need to see each other

Setup steps

1. Port Setting

    1.1 Assign VLAN 1 as the default VLAN group for all ports

    1.2 Assign VLAN 2 for the second VLAN group with port 1 and port 16

    1.3 Repeat the same steps for port 2 to port 15. i.e. 2 & 16, 3 & 16, ….., 15 & 16

2. PVID setup

    2.1 Assign “1” (i.e. ID of VLAN 1) to port 16 as its PVID (Port VLAN ID).

    2.2 Assign “2” to port 1 as its PVID

    2.3 Repeat above steps for port 2 to port 15 with its PVID, i.e. 3 (port 2), 4 (port 3), to 16 (port 15)

After the above steps port 1 to port 15 is being separated physically due to it belongs to different VLAN groups (different VLAN). However, they all can access port 16 due to port 16 is using PVID 1 to communicate with port 1 to port 15. This configuration (for VLAN 1 to VLAN 4) can be found in Figure 5-6.

5-5 Port Trunk Setup

This section allows you to disable or enable trunk function of two ports or four ports together to speed up data transmission. The screen in Figure 5-8 appears.

Figure 5-8 FNSW-1608PS Port Trunk Setup Web Page screen

Notice:

After turn on the port trunk feature, port 1 and port 2 or port 13,14,15,16 should connect to another switch, such as another FNSW-1608PS, that also supports port trunk feature to double the bandwidth in between. Otherwise, if the connected switch do not support port trunk, it will cause network loop and hangs the whole network.

5-6 Misc Configuration

This section provides Misc Configuration of FNSW-1608PS, the screen in Figure 5-9 appears and table 5-3 descriptions the Misc Configuration objects of FNSW-1608PS.

Figure 5-9 FNSW-1608PS Misc Configuration Web Page screen

Object	Description
System Info	Allow user to configure the system configuration, please refer to chapter 5.6.1
Password / Access Setting	Allow user to change the password and maximum up to 4 characters, please refer to chapter 5.6.2
Restore System Default	Allow user to reset the FNSW-1608PS to factory default mode, please refer to chapter 5.6.3
Reboot System	Allow user to reboot the FNSW-1608PS, please refer to chapter 5.6.4
Firmware Upgrade	Allow user to proceed the firmware upgrade process of FNSW-1608PS, please refer to chapter 5.6.5

Table 5-3 Descriptions of the Misc Configuration screen Objects

5.6.1 System Information

This section provides System Configuration of FNSW-1608PS, the screen in Figure 5-10 appears and table 5-4 descriptions the System Configuration objects of FNSW-1608PS.

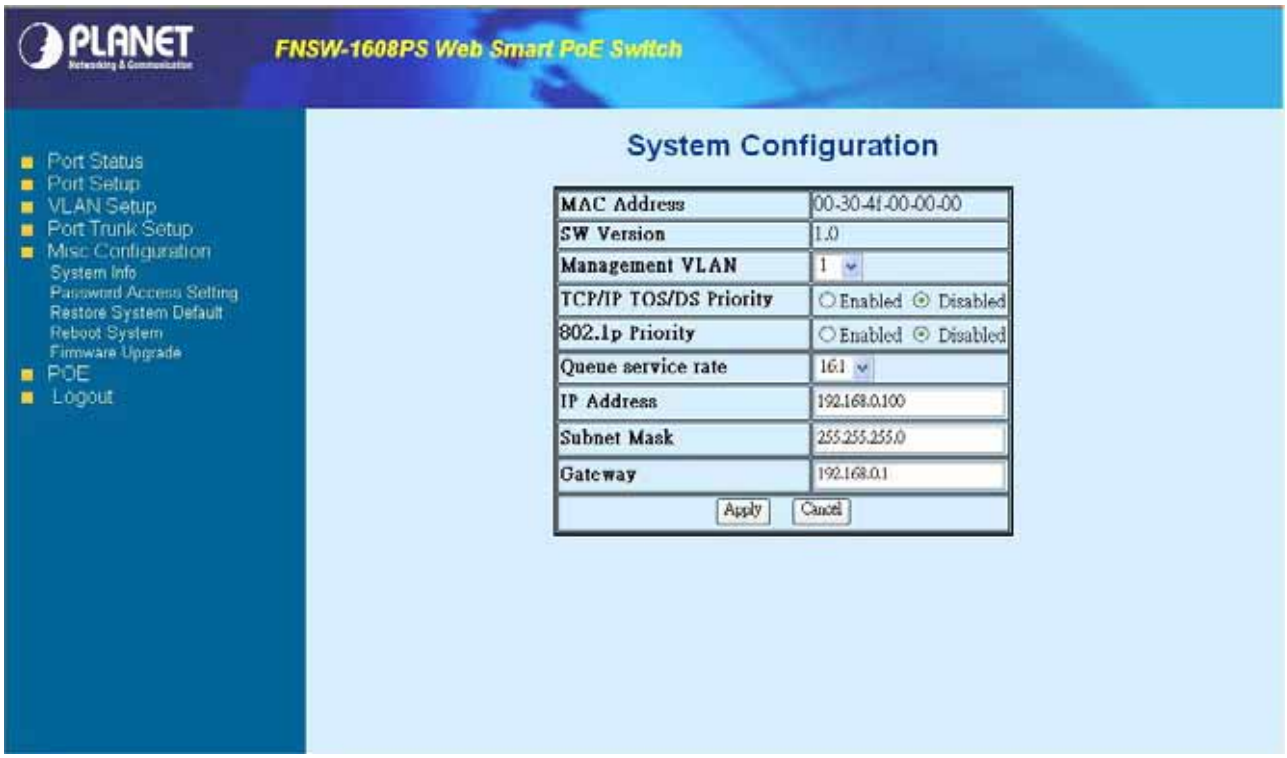


Figure 5-10 FNSW-1608PS System Configuration Web Page screen

Object	Description
Mac address	Display Mac address of FNSW-1608PS.
SW Version	Display firmware version of FNSW-1608PS.
Management VLAN	Allow user to select management VLAN and available options is 1 to 16.The screen in Figure 5-11 appears.
TCP/IP TOS/DS Priority	Allow user disable or enable TCP/IP TOS/DS Priority function
802.1p Priority	Allow user disable or enable 802.1p Priority function
Queue service rate	Allow user to select queue service rate and available options are 4:1, 8:1, 16:1, N. The screen in Figure 5-12 appears. Default is 16:1.
IP Address	Allow user to assign new IP address of FNSW-1608PS, after setup completed. Please press **"Apply"** button and switch will reboot automatically to take effect.
Subnet Mask	Allow user to assign new Subnet Mask of FNSW-1608PS, after setup completed. Please press **"Apply"** button and switch will reboot automatically to take effect.
Gateway	Allow user to assign new Gateway of FNSW-1608PS, after setup completed. Please press **"Apply"** button and switch will reboot automatically to take effect.

Table 5-4 Descriptions of the System Configuration screen Objects

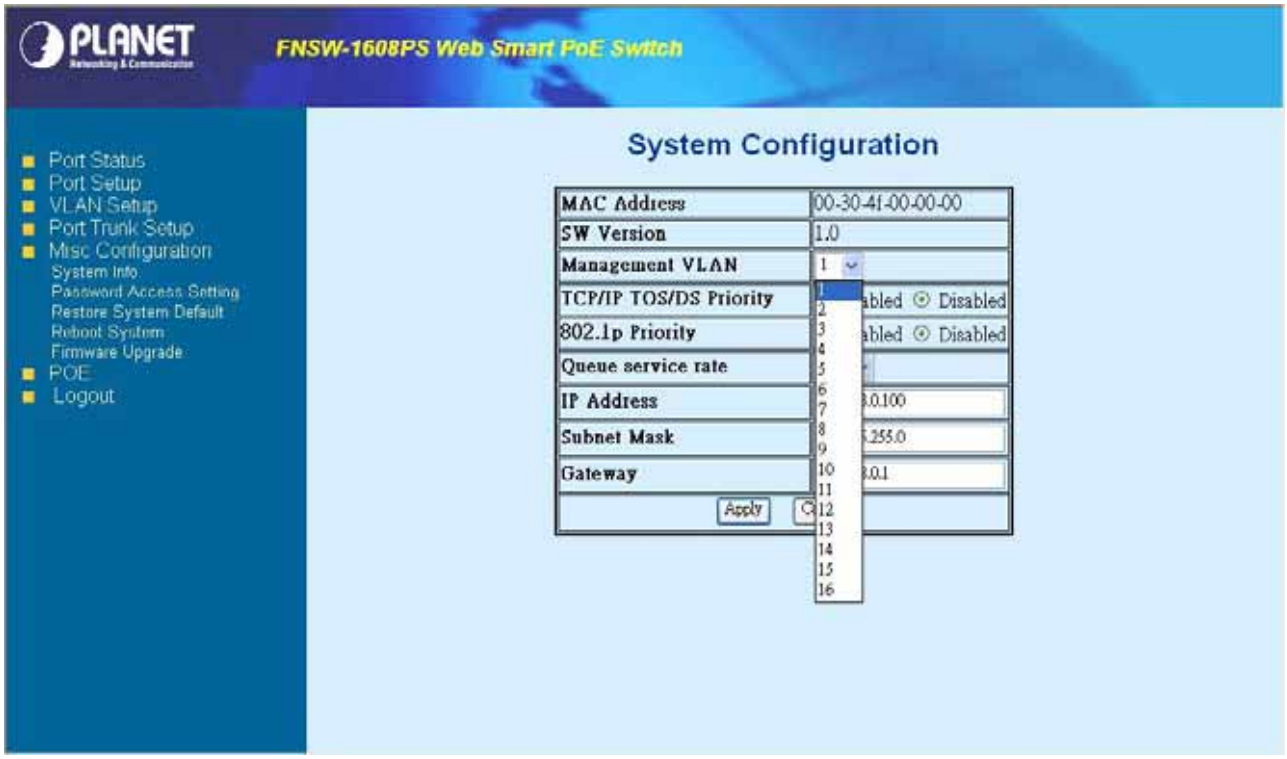


Figure 5-11 FNSW-1608PS Management VLAN options Web Page screen

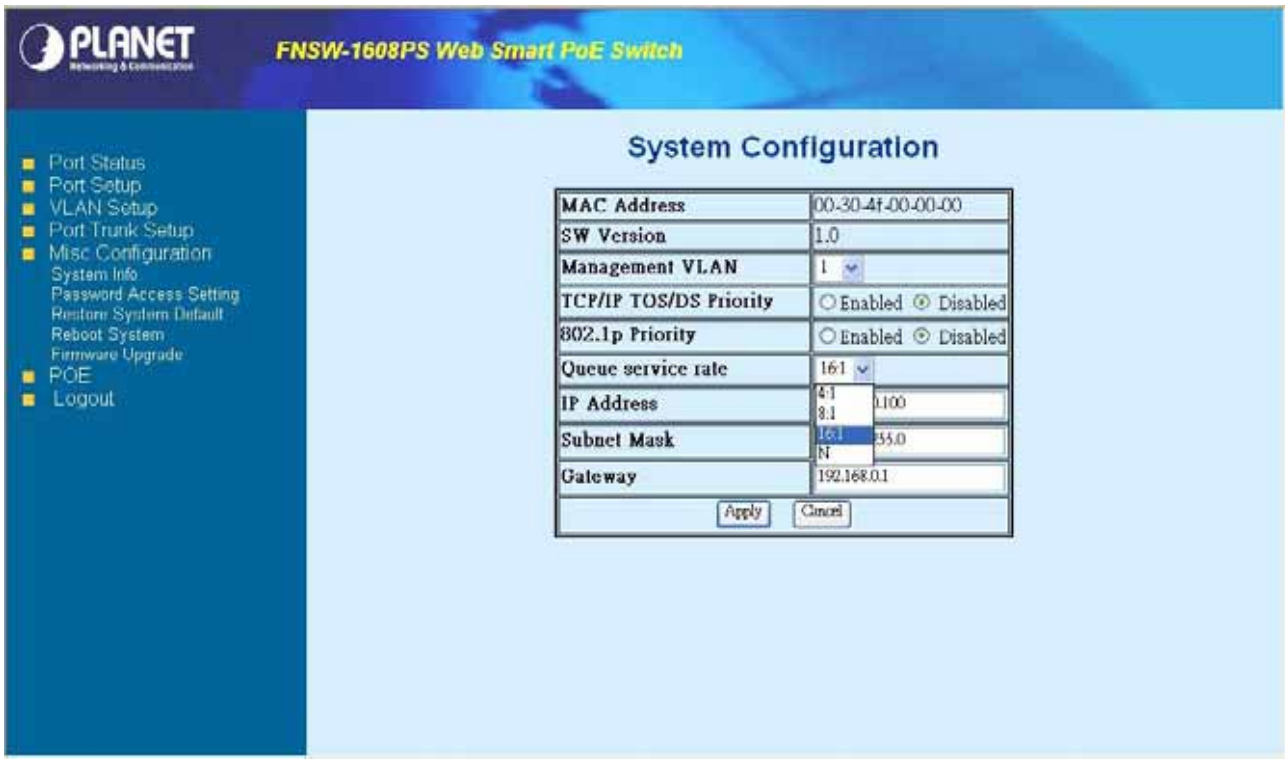


Figure 5-12 FNSW-1608PS Queue service rate options Web Page screen

5.6.2 Password / Access Setting

This section provides password change Configuration of FNSW-1608PS, please input the old password in "**Password"** space and input the new password in **"New Password"** space. After setup completed, please press **"Submit"** button to take effect and the switch will logout automatically. Please login web interface with new password, the screen in Figure 5-13 & 5-14 & 5-15 appears.

Figure 5-13 FNSW-1608PS Password change Web Page screen

Figure 5-14 FNSW-1608PS Re Login Web Page screen

Figure 5-15 The FNSW-1608PS login Web Page screen

5.6.3 Restore System Default

This section provides reset FNSW-1608PS to factory default mode, after choose this function and the following screen appears in Figure 5-16. Please press **"OK"** button to take effect and the switch will reboot automatically and ask you to re-login web interface with default username **"admin"** without password, the screen in Figure 5-17 & 5-18 & 5-19 appears.

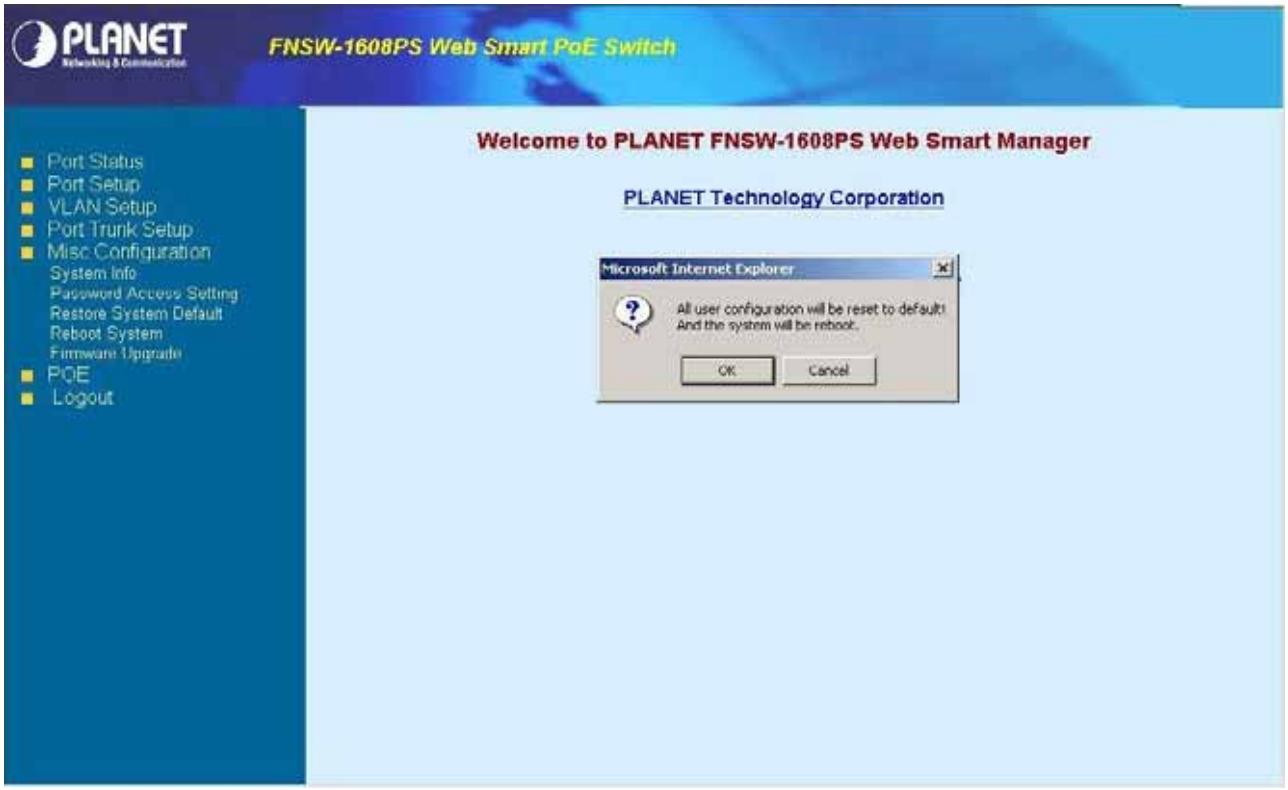


Figure 5-16 The FNSW-1608PS reset to factory default Web Page screen

Figure 5-17 The FNSW-1608PS rebooting Web Page screen

Figure 5-18 FNSW-1608PS Re Login Web Page screen

Figure 5-19 The FNSW-1608PS login Web Page screen

5.6.4 Reboot System

This section provides reboot FNSW-1608PS, after choose this function and the following screen appears in Figure 5-20. Please press **"OK"** button to take effect and the switch will reboot and ask you to re-login web interface with correct username **"admin"** and password, the screen in Figure 5-21 & 5-22 & 5-23 appears.

Figure 5-20 The FNSW-1608PS reboot system Web Page screen

Figure 5-21 The FNSW-1608PS rebooting Web Page screen

Figure 5-22 FNSW-1608PS Re Login Web Page screen

Figure 5-23 The FNSW-1608PS login Web Page screen

5.6.5 Firmware Upgrade

This section provides firmware upgrade of FNSW-1608PS, after choose this function and the following screen appears in Figure 5-24. Please press **"Update"** button to continue following firmware upgrade process.

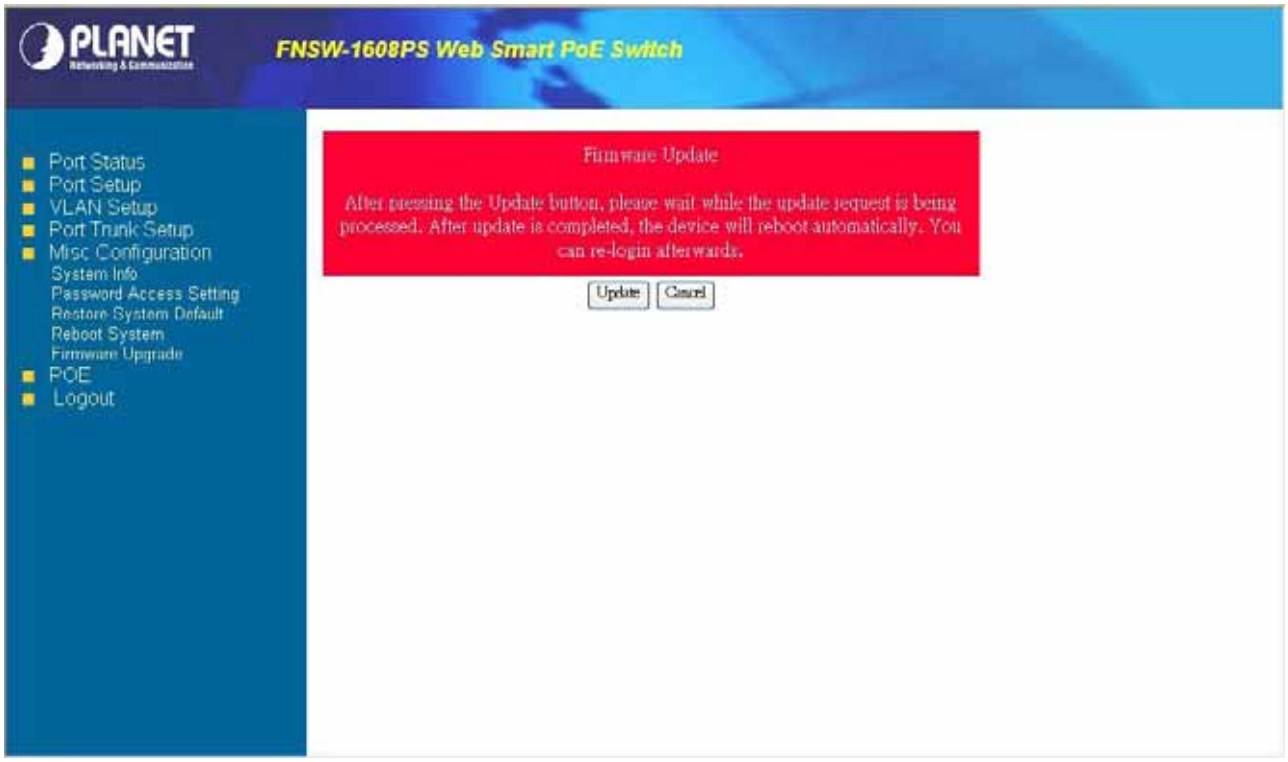


Figure 5-24 The FNSW-1608PS firmware upgrade Web Page screen

Please wait for two seconds and press **"Continue"** to next firmware upgrade web page, the screen in Figure 5-25 appears.

Figure 5-25 The FNSW-1608PS firmware upgrade Web Page screen

Please press **"Browser"** to locate the latest firmware of FNSW-1608PS that deposit in your PC and press **"Upgrade"** to start the firmware upgrade process. The screen in Figure 5-26 appears.

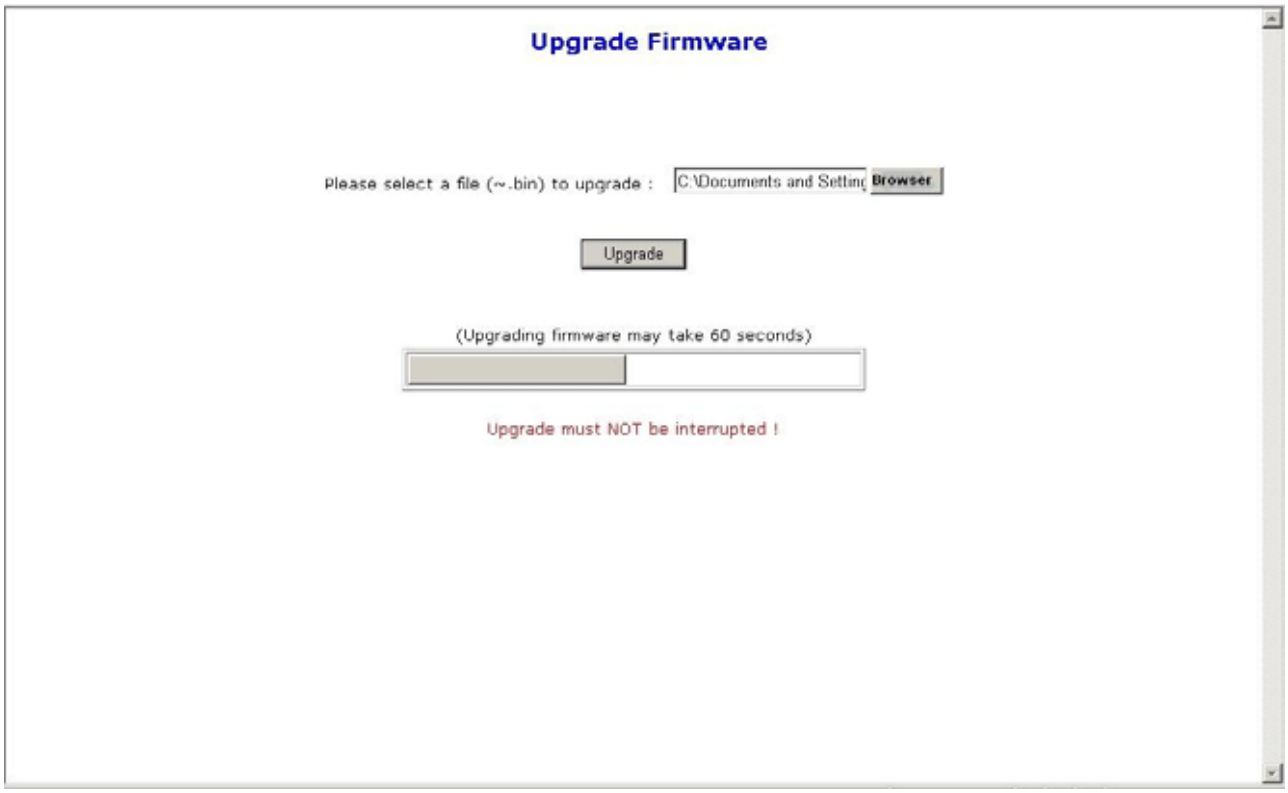


Figure 5-26 The FNSW-1608PS firmware upgrade Web Page screen

Please wait for twenty-four seconds and go to next firmware upgrade web page, the screen in Figure 5-27 appears.

Figure 5-27 The FNSW-1608PS firmware upgrade Web Page screen

Then the re-login screen appears in Figure 5-28, please press **"Re Login"** button to re-login web interface of FNSW-1608PS with latest firmware version, the screen in Figure 5-29 appears.

Figure 5-28 The FNSW-1608PS firmware upgrade Web Page screen

Figure 5-29 The FNSW-1608PS login Web Page screen

Notice: Please does not power off the FNSW-1608PS during firmware upgrade process.

5-7 POE

This section provides POE status and POE configuration of FNSW-1608PS, the POE Status screen in Figure 5-30 appears and Table 5-5 describes the POE status object of FNSW-1608PS.

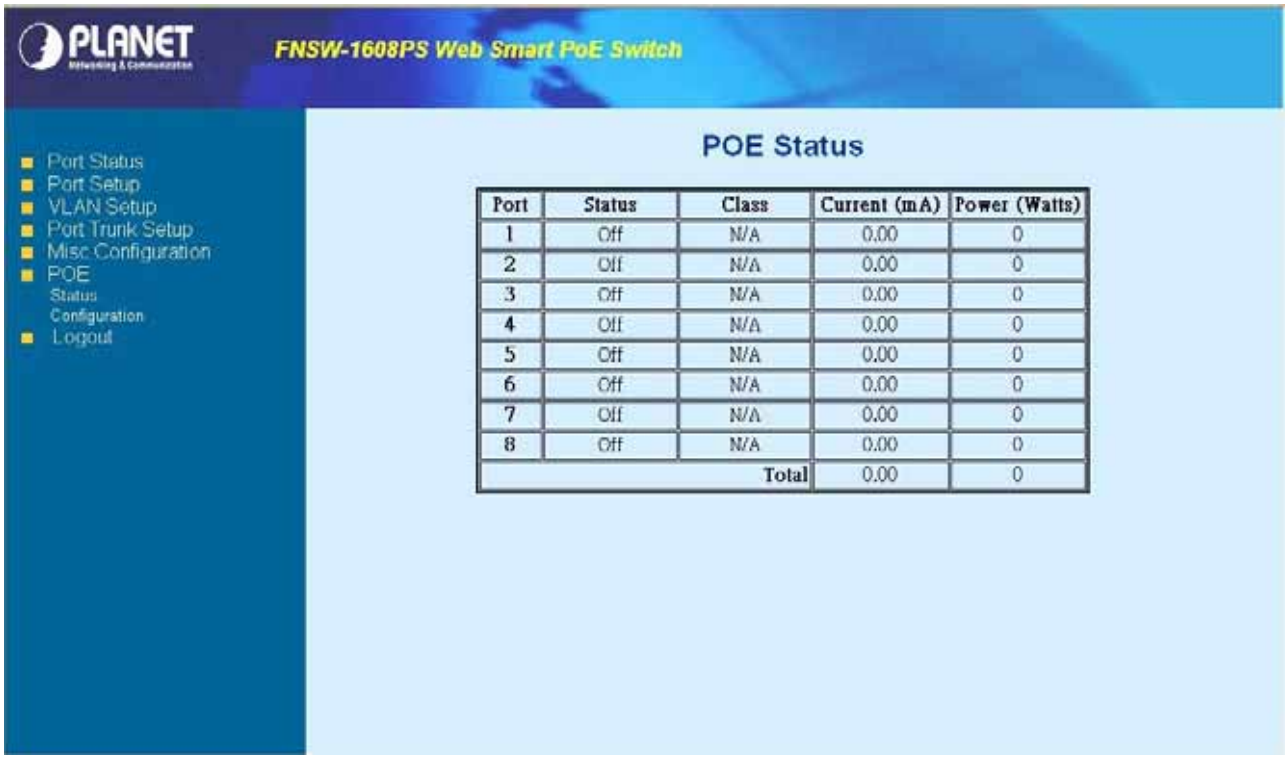

PLANET
FNSW-1608PS Web Smart PoE Switch
Port Status
Port Setup
VLAN Setup
Port Trunk Setup
Misc Configuration
POE
Status
Configuration
Logout
POE Status
Port | Status | Class | Current (mA) | Power (Watts)
1 | Off | N/A | 0.00 | 0
2 | Off | N/A | 0.00 | 0
3 | Off | N/A | 0.00 | 0
4 | Off | N/A | 0.00 | 0
5 | Off | N/A | 0.00 | 0
6 | Off | N/A | 0.00 | 0
7 | Off | N/A | 0.00 | 0
8 | Off | N/A | 0.00 | 0
Total | 0.00 | 0

Figure 5-30 FNSW-1608PS POE Status Web Page screen

Object	Description
Port	Indicate port 1 to port 8.
Status	Indicate the POE status of port 1 to port 8.
Class	Display the POE PD power classification.
Current(mA)	List each connected device current usage.
Power(watts)	List each connected device power usage.
Total	The summary list of Current(mA) and Power(watts)

Table 5-5 Descriptions of the POE Status screen Objects

The POE Configuration screen in Figure 5-31 appears and Table 5-6 describes the POE Configuration object of switch. After setup completed, please press **"Apply"** button to take effect.

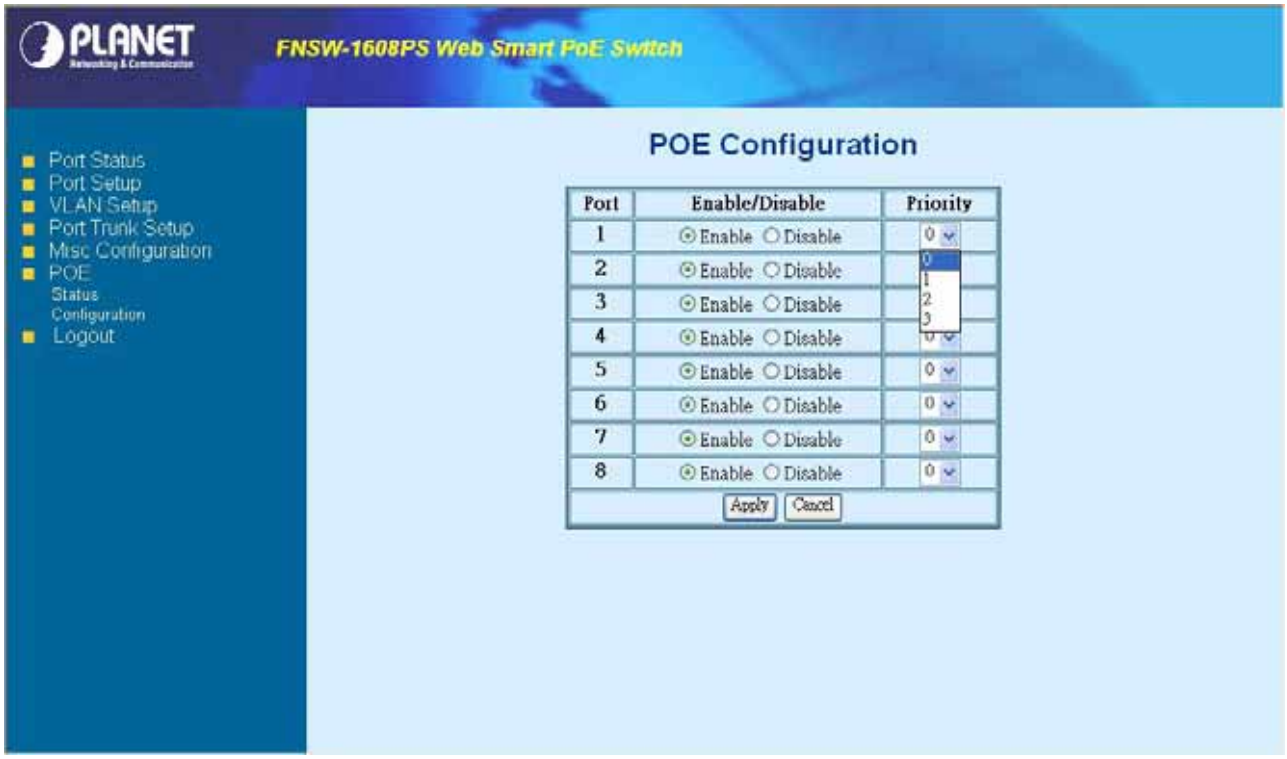


Figure 5-31 FNSW-1608PS POE Configuration Web Page screen

Object	Description
Port	Indicate port 1 to port 8.
Enable / Disable	Allow to disable or enable each POE port.
Priority	Allow to assign the POE power provision priority on each POE port, the available range is 0-3. The 0 is highest and the 3 is lowest.

Table 5-6 Descriptions of the POE Configuration screen Objects

5-8 Logout

This section allows to logout the FNSW-1608PS, the screen in Figure 5-32 & 5-33 appears.

Figure 5-32 FNSW-1608PS Logout Web Page screen

Figure 5-33 The FNSW-1608PS login Web Page screen

6. SWITCH OPERATION

6.1 Address Table

The Switch is implemented with an address table. This address table composed of many entries. Each entry is used to store the address information of some node in network, including MAC address, port no, etc. This information comes from the learning process of Ethernet Switch.

6.2 Learning

When one packet comes in from any port. The Switch will record the source address, port no. And the other related information in address table. This information will be used to decide either forwarding or filtering for future packets.

6.3 Forwarding & Filtering

When one packet comes from some port of the Ethernet Switching, it will also check the destination address besides the source address learning. The Ethernet Switching will lookup the address-table for the destination address. If not found, this packet will be forwarded to all the other ports except the port which this packet comes in. And these ports will transmit this packet to the network it connected. If found, and the destination address is located at different port from this packet comes in, the Ethernet Switching will forward this packet to the port where this destination address is located according to the information from address table. But, if the destination address is located at the same port with this packet comes in, then this packet will be filtered. Thereby increasing the network throughput and availability.

6.4 Store-and-Forward

Store-and-Forward is one type of packet-forwarding techniques. A Store-and Forward Ethernet Switching stores the incoming frame in an internal buffer, do the complete error checking before transmission. Therefore, no error packets occurrence, it is the best choice when a network needs efficiency and stability.

The Ethernet Switch scans the destination address from the packet-header, searches the routing table provided for the incoming port and forwards the packet, only if required. The fast forwarding makes the switch attractive for connecting servers directly to the network, thereby increasing throughput and availability. However, the switch is most commonly used to segment existing hubs, which nearly always improves overall performance. An Ethernet Switching can be easily configured in any Ethernet network environment to significantly boost bandwidth using conventional cabling and adapters.

Due to the learning function of the Ethernet switching, the source address and corresponding port number of each incoming and outgoing packet are stored in a routing table. This information is subsequently used to filter packets whose destination address is on the same segment as the source address. This confines network traffic to its respective domain, reducing the overall load on the network.

The Switch performs "Store and forward" therefore, no error packets occur. More reliably, it reduces the re-transmission rate. No packet loss will occur.

6.5 Auto-Negotiation

The STP ports on the FNSW-1608PS switch have built-in "Auto-negotiation". This technology automatically sets the best possible bandwidth when a connection is established with another network device (usually at Power On or Reset). Detecting the modes does this and speeds at the second of both devices are connected and capable of, both 10Base-T and 100Base-TX devices can connect with the port in either Half- or Full-duplex mode.

7.TROUBLESHOOTING

This chapter contains information to help you solve problems. If the Switch is not functioning properly, make sure the Ethernet Switch was set up according to instructions in this manual.

The Link LED is not lit

Solution:

Check the cable connection and remove duplex mode of the Switch.

Some stations cannot talk to other stations located on the other port

Solution:

Please check the VLAN, port trunking function that may introduce this kind of problem.

Performance is bad

Solution:

Check the full duplex status of the Ethernet Switch. If the Ethernet Switch is set to full duplex and the partner is set to half duplex, then the performance will be poor.

100Base-TX port link LED is lit, but the traffic is irregular

Solution:

Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

Why the Switch doesn't connect to the network

Solution:

Check the LNK/ACT LED on the switch Try another port on the Switch Make sure the cable is installed properly Make sure the cable is the right type Turn off the power. After a while, turn on power again.

Why I connect my PoE device to FNSW-1608PS and it cannot power on?

Solution:

1. Please check the cable type of the connection from FNSW-1608PS (port 1 to port 8) to the other end. The cable should be an 8-wire UTP, Category 5 or above, EIA568 cable within 100 meters. A cable with only 4-wire, short loop or over 100 meters, all will affect the power supply.
2. Please check and assure the device that fully complied with IEEE 802.3af standard.

How to deal forgotten password situation of FNSW-1608PS?

Solution:

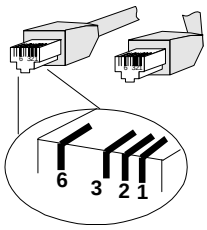
1. Please contact Planet switch support team and the mail address is **support_switch@planet.com.tw**

APPENDIX A NETWORKING CONNECTION

A.1 Switch‘s RJ-45 Pin Assignments

Contact	MDI	MDI-X
1	1 (TX +)	3
2	2 (TX -)	6
3	3 (RX +)	1
6	6 (RX -)	2
4, 5, 7, 8	Not used	Not used

A.2 RJ-45 cable pin assignment



There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:

Figure A-1: Straight-Through and Crossover Cable

Please make sure your connected cables are with same pin assignment and color as above picture before deploying the cables into your network.

2080-A31120-000

CE